

CALIFORNIA STATE BOARD OF HEALTH MONTHLY BULLETIN



The beaches of California are summer and winter playgrounds. To keep them clean is a civic duty. Garbage, waste and other refuse must never be tolerated on these magnificent stretches of wave-washed sands.

STANDARDS FOR CHILD CARE
THE PUBLIC HEALTH NURSE
MENTAL TESTS

NOVEMBER, 1919

California State Board of Health.

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MINIMUM STANDARDS FOR CHILD CARE.*

By MISS AMY STEINHART, Chief Children's Agent, State Board of Control, Sacramento.

A conference called for the betterment of social matters seems to have as its direct and fundamental excuse, even though it be unconsciously so, the improvement of conditions affecting childhood. Even though the effect of any reform may be immediately patent, in its final analysis its usefulness is proven by the benefit it confers upon the offspring of its proponents. This must be the great compensation to those who labor in the field of social endeavor, for too often the discouragement that goes with a daily realization of the handicap under which so many children are born, the sense of the setbacks that come to them despite their best efforts, is too great, and there seems no reward beyond immediate relief and palliation, however the necessity for constantly fortifying the ground work; for working step by step and building solidly and painstakingly, day by day, must lay a cornerstone from which future reconstruction shall rise.

Furthermore, the age is gone in which we can ignore the social cost of the waste of childhood. We are being awakened more and more to a realization of how deeply this neglect can eat into the roots of our commonwealth. The job even half done rises up in its incompleteness to reproach us; the various phases of social well-being are so inextricably tied up that the oversight of one may completely submerge an intensive achievement in another. Imagine, for example, a family reaping the benefits of a high wage arbitrarily imposed and no compulsory law to make the children go to school. Surely the fight for the income was made in vain. Imagine this same family with the same wage standard, the children forced to go to school and yet the sanitary conditions of living so poor that they are in constant danger of falling the victims of disease, and so, more and more, public agencies are stepping in and assuming as their welcome and legitimate responsibility the protection of humankind, and childhood in particular. We are learning to express ourselves in meaningful terms. We are talking of the *rights* of childhood, of the *community's duty* to childhood, of this as *the age of the child*. And so every once in so often it is well for us not to be carried away by resounding terms, but to pause and take stock—to compare the asset and debit column and to see what the firm known as the United States of America, and its flourishing representative in the Far West, have to show on their report sheet.

President Roosevelt Calls First National Child Welfare Conference.

There have been two great national Child Welfare Conferences. The first was held in Washington in 1909 and was known as the White House Conference. The other, held within the year, is known as the Children's Bureau Child Welfare Conference, and called into council not only the foremost specialists in this country, but included numerous distinguished experts from foreign lands. President Roosevelt, in calling the gathering of 1909, said:

"There can be no more important subject from the standpoint of the nation than that with which you are to deal; because, when you take care of

*Read at the Eleventh Annual Conference of State, County and Municipal Health Officials, Riverside, October 20-24, 1919.

the children you are taking care of the nation of tomorrow; and it is incumbent upon every one of us to do all in his or her power to provide for the interests of those children whom cruel misfortune has handicapped at the very outset of their lives. I earnestly hope that the members of this conference will take a progressive stand, so as to establish a goal toward which the whole country can work. In other words, I earnestly hope that each of you will consider not only the interests of his immediate locality, but the interests of the nation as a whole."

President Wilson, in endorsing the recent Children's Year, said: "I trust that the work may so successfully develop as to set up certain irreducible minimum standards for the health, education and work of the American child." Miss Lathrop, in transmitting her report of the 1919 Children's Welfare Conference, which was the climax of the year, said that on the great essentials of child welfare policy for the nation there is, however, marked agreement. Public responsibility for the growing generation, confidence in constructive measures, insistence upon greater uniformity in laws, are all steadily emphasized.

It is very interesting to compare the findings of these two groups. The first confined itself to a study of the needs of the dependent child. It advocated the creation of a Children's Bureau, laid special stress upon the conservation of the family and the importance of home rather than institutional life. It made suggestions for the improvement in methods of supervision. The section of the conference of 1919 most closely allied with this reiterated and endorsed all these recommendations, added thereto the necessity for the care of the child of the illegitimate parent, emphasized the importance of rural social service, of recreation, discussed juvenile courts and the problem of the mental defectives. It urged a careful reconsideration at reasonable intervals of all child welfare legislation and urged also the creation of a child welfare committee or commission. In a general way it divided its discussions as follows: (1) Economic and social basis for child welfare standards; (2) Child labor; (3) The health of children and mother.

The two assemblages are separated by exactly ten years, and I wonder if they indicate the degree in which the public consciousness is expanding in questions which involve the care of children. There is no phase of child well-being but is touched upon at the last gathering, and to which some inspiration is given for further activity. Note the titles of some of the papers:

"The Leisure of the Child," "Economics of Child Welfare," "Racial Factors," "Defective Vision Among Chicago Working Children," "State Control of Employment," "Health Centers for Pre-school Children," "Day Nursery Standards," etc., etc. They aid us immeasurably in our stock taking process; we scan our assets and we look to the future for the fortifying of what we have and the addition of statutes that will more and more enable us to avoid further loss.

Laws for the Child Passed by Last Legislature.

Of obligations, recognized as public, the educational one was the first in California, and our present free school system is the result. California, at the last session of the legislature, advanced its child labor law from 15 to 16, and in consequence the former school law was strengthened. Unfortunately, there are certain exemptions that weaken the 16-year statute. There are the rights of a boy or girl to work who is 14 and has completed the eighth grade, and whose earnings are needed for his own support; and the right of

a child of 15 who is in the eighth grade or has finished the seventh grade and is attending night school. It is for these children that a state and county subsidy is urged rather than work and night school, for both the Industrial Welfare Commission and the State Board of Education feel very strongly that night school attendance is at best a poor makeshift for the regular routine of daytime attendance, and too often the physical strain is so great as to render the child unfit in later years for the earning of an adequate wage.

The other very interesting educational enactment of the last legislature was a clause which makes compulsory at least part-time schooling for all persons between 16 and 18, and another which provides opportunities to foreigners under 21 for the learning of English.

The second great public responsibility which California recognized was that to its dependent children, and its accomplishment in this direction dates back to the revised constitution of 1879, when in a very specific way the state bound itself to a plan for the subsidy of children who through the death or abandonment of parents could not be maintained except at public expense. The gradual development of this work, its reaction on other phases of child welfare, has been the service to which the children's department of the Board of Control is dedicating itself, and it is as the result of a study of six years of the needs of dependent children that we are now ready to present certain suggestions for their advancement. These suggestions are more than useless if we are not able to call on your enthusiastic endorsement and co-operation. We feel that in order to make the state's expenditure—and it will run to \$2,190,000 for the biennial period—a justifiable investment, we must take advantage of the advice and influence of state and local child hygienists, of probation officers, truant officers, child welfare bodies, teachers and clubs.

Of state bodies we must use the services of the Board of Health and its subsidiary bureaus, of the supervisory and organizing powers of the Board of Charities and Corrections, of the experience that has come to the Immigration and Housing Commission in its extensive work among foreigners, of the Industrial Welfare Commission in its wage enactment for women and the consequent reaction in the well-being of children, of the State Library with its service to county libraries and their co-operation with the school and the teacher, and of the advice of the Board of Education, whose work is so closely allied with ours that in some states so-called widow's pensions are directly administered by it.

When in 1913 the children's department of the Board of Control was organized, it took up its activities in a spirit that aimed to combine in as large a degree as possible the social, economic, and educational factors that the importance of the work warranted. It is often hard to determine with which one of these factors it functions most. The work is surely social, so far as its reaction on one family must redound to the benefit of other families in the community, and in so far as it insists on proper moral surroundings for every household under its jurisdiction. It is economic in so far as it looks upon the child as being a real value to the community and the mother as a fit and proper person to whom a salary shall be paid by the state and county for the child's support; and it is educational inasmuch as it insists upon school attendance as a requirement toward the granting of aid, and is spreading, in addition to this, propaganda for the studying of the psychological, hygienic and educational needs of the child.

The aid law, as you all know, was amended at the legislature of 1919. Under its new form, the sum of \$10 a month must be allowed by the state

for the support of needy whole orphans, half-orphans and abandoned children; an additional \$10 may be allowed by the county, and in this connection the state has for the first time the right to withhold all aid in counties which do not supplement the family income to as great a degree as is needed. The law, as it reads, is far more nearly adequate in its accomplishment than it ever has been. For the woman with but one or two children, the problem of public support is by no means solved if she is in good health and the family is sufficiently small that she can undertake some part-time occupation, but for the woman in poor health there ought to be a special enactment. Unfortunately there is a constitutional limitation to this at the present time, but constitutional limitations may be remedied by the public vote, and so this ought to be one of the reforms to have in mind for future approval. The law in a rather interesting, though tacit, manner recognized the mother at home as the desirable caretaker of her children. In all previous lawmaking the half-orphan child was allowed a lesser amount of money than the whole orphan; in a manner this penalized children that had a mother, or indicated that she was expected to go out of the home to assist in the support of her children; the law, as it reads now, does not necessarily require her contribution except in small families or on a part-time basis. We feel now that the state and county is giving the head of the household a sufficient leisure to sew for her family, to maintain a careful supervision over them and to guarantee to them the educational and moral standards which can make them desirable citizens.

A Standard Budget.

Professor M. E. Jaffa, consulting nutrition expert for the Board of Health and the Board of Control, has made a standard budget which is serving as a basis for our recommendations for food allowance. We present it, knowing that it will prove of special interest to this group:

Woman (light work)-----	\$13.062
Man (hard work)-----	19.593
Man (light work)-----	16.227
Boy (over 13)-----	16.227
Girl (over 13)-----	13.062
Child (9 to 13)-----	11.427
Child (6 to 9)-----	9.795
Child (2 to 5)-----	8.163

Compare with it the Chicago budget, which is published in the very illuminating pamphlet written by Miss Florence Nesbit for the Chicago Council of Social Agencies:

Woman (light work)-----	\$10.27
Man (heavy work)-----	12.82
Boy (12 to 14)-----	10.50
Girl (12 to 14)-----	9.43
Child 9 to 12)-----	9.00
Child (6 to 9)-----	8.13
Child (under 6)-----	6.91

The Jaffa budget calls for a minimum amount of milk and the protective foods for each member of the family; but we must bear in mind constantly that not every housewife has a knowledge of true food values; that in order to make the Jaffa budget effective the money must be expended in proper proportions and with an understanding of nutritive requirement. Money

meant for milk, if deflected to grocery store cookies and beans, may advance the total expenditure to an adequate figure, but the gain in the health of the children will soon prove its inadequacy in qualitative expenditure, and so, on our latest applications, we have entered columns for budgets and height and weight with the hope that the psychological effect of calling a mother's attention to the need of a systematic accounting system and a yearly observation of her children's growth may prove effective to such a degree that it will manifest itself in their constant improvement. In addition, our agents as they go about the state are trying to place constantly the necessary emphasis on the proper feeding of children before county agencies and individual families. In this connection a special leaflet on the value of milk was published. The present increased cost in milk is proving a grievous problem and too many families are not buying fresh milk, but are depending on the canned product. This means, of course, that the children will not drink it, and so the uneducated mother feels she has effected a genuine saving in expense, little knowing how it spells future disaster. Can you who are gathered here as county and city health experts not effect some plan for milk distribution similar to that in Los Angeles, where tickets for milk bought at wholesale are distributed to the needy families who have young children? Many of them could pay the cost out of their wages, others again would include the payment out of their monthly public allowances, but the desirable result would be accomplished.

To the food budget there must be added the actual expenditure for fuel, light, rent or taxes, carfares, and an estimate for shoes and clothing. The latter have been fluctuating so greatly of late that it has been found best to make an estimate from the individual family statement. It has been with considerable regret that we have noted, especially of late, a tendency among certain counties to reduce foreign races to a very low allowance basis. It is true that these families do not at first glance seem to understand the necessity for diversity in foods—for sufficient quantities of milk. Too many of them find their children enjoy coffee, so why not gratify their taste? Surely, here, there is a vast field for the physician, dietician, the nurse and the trained social worker. Few mothers are so callous as not to want to see their children thrive; few do not respond to an intelligent explanation of how to better their children's health. If necessary, supervise their monthly expenditures as closely as you can, but don't let the practice continue of merely keeping starvation away because of their nationality. I can't see how the person who terms herself a community servant can resist the opportunity which this new field offers. I should think the outlook for improvement and upbuilding of children who represent an entirely new field would appeal to him as does the microscope and the laboratory to the true scientist. Let him not be afraid that a penny may be spent foolishly; let him be patient and realize that adaptation to one's neighbors' standards of feeding is a genuine step in an Americanization process. Jane Addams in her "Democracy and Social Ethics" dwells on the effect of the understanding between the foreign parent and the Americanized child which was brought about by a glorification and understanding of the work the parent performed. In the same way it seems to us there is a like respect commanded by an understanding in food standards. I am wondering whether the lack of change of food on arrival in a new climate is not very definitely responsible for the nonresistance to tuberculosis and skin disturbances which come to some of the Latin races. Enlightened feeding methods must go with enlightened housing and living

conditions. It is strange that so obvious a necessity as sufficient light and sun and ventilation often goes unnoticed. May be we in California, knowing that we have all outdoors to draw upon, and convinced as we are that we have few real tenements, have become unduly care free as to conditions under which our laborers live. Surely, this beyond everything is a community obligation, and yet we find families of children sleeping on mattresses on the floor, too many crowded into one room without adequate ventilation. These are matters which local health officers can and must regulate. These are matters in which the children's agents, administering as they do for the benefit of some ten thousand children, are setting standards. Many of these children have, through the same agency, become acquainted for the first time with dental hygiene, and it is our hope that the time will come when every child in the state will have the opportunity for a physical examination, this to be followed by the benefits of a mental test. Of these two activities, other members of the department will speak.

The Child's Needs.

And so, finally, we call for your co-operation and understanding of the needs of the children. We ask for every one of them an education that will carry them at least to their eighteenth birthday; an income sufficient for the conservation of the health of the parent and the child. We ask opportunities for recreation and the leisure for the parent in which to supervise the family. We look for an organized plan for medical care and psychological study. We ask further for more facilities for the care of the physically handicapped and the mentally retarded, and for the child who has been exposed to the danger of infection.

As the best possible propaganda for the fulfillment of these needs, we beseech of you a close attention to the matter of case records and case histories, for without these our fight must be made too largely on a sentimental basis, and the outcome of campaigns so made too often is uncertain.

And now, last of all, we want to call your attention one and all to what seems to us in state service the greatest piece of progressive legislation: This is a constitutional amendment which will come up at the next general election. It gives to the state the right to make provision for the child of the parent who is suffering from tuberculosis, or who is so incapacitated as to be unable to pursue a gainful occupation. To you, one and all, we make known these needs, knowing that your understanding of them and your endorsement will be a long step toward the fulfillment.

THE RELATION OF MENTAL TESTS TO PUBLIC WELFARE.*

By DR. KATE GORDON, Psychologist, Children's Aid Department, State Board of Control.

The subject of mental tests is no longer a novelty. The measurement of intelligence and the reasons for making such measurements are beginning to be well understood. Especially before such an audience as this it is unnecessary to make any extended argument in favor of the use of mental tests. Medical men have been among the first to recognize the possibilities of such examinations and to encourage their development and use. What I do wish, however, is to urge that they be used much more extensively and more systematically. I want to ask the members of this association to help in promoting a uniform policy by which this type of service shall be made available for all of the children of California. May I then review with you the reasons why mental tests ought to be so employed?

The general purpose of such tests, as you know, is the comparison of the individual with the standard for his age, *i. e.*, the classification of persons, especially children, according to mental level. Let us direct our attention to the four or five groups of persons who are most vitally affected by such classifications.

The Mental Test Benefits the Mentally Superior Child.

First, and perhaps most important, there is the group of children with superior mental endowment. In not a few cases these children may remain unnoticed except for a systematic school survey. This point is too seldom emphasized. We are apt to think that the bright child can discover himself, or that his parents will do it for him. But this is not a safe assumption. Some children have lost their parents. There are many exceptionally gifted children in the orphan asylums of this state. Other children have parents who are ignorant or indifferent. What greater social service than to rescue the talents of these children!

The Cruel Plight of the Mentally Defective Child.

Next consider the mentally defective child who is going to school in the regular grades. As long as we place him side by side with average children, and make the same demands upon him, our treatment of him is both unkind and futile. Nothing is more pitiful than the efforts of such a child to keep up with the more favorably endowed. It is sometimes said that the mentally defective do not realize their own inferiority, but this is certainly not always true. Feeble-minded children have told me that they are "way behind the others." Moreover, children sometimes taunt each other with these things. It is inexcusably cruel to keep on subjecting these pathetic children to such unfair and humiliating comparisons. Moreover, when separated into special classes, these boys and girls may be happily employed and make better progress.

The Problem the School Teacher Faces.

Another person very much concerned with this matter of mental status is the teacher. We are demanding a miracle when we put upon the public school teacher the burden of ill-assorted classes and then require a standard

*Read at the Eleventh Annual Conference of State, County and Municipal Health Officials, Riverside, October 20-24, 1919.

accomplishment. Any teacher who has had to handle a class in which the bright and the dull are expected to get over the same ground knows how much time is absorbed by the dull pupils. They may need as much as three times the amount of drill that the others do, and the whole class must be kept marking time while the slow ones are being pulled along. Wherever the numbers warrant it, classes should be divided on the basis of mental tests. There are many ways in which a knowledge of the mental status of the children under his care will prove helpful to the teacher. A teacher can give better service, and, incidentally, he can take care of a bigger class, provided the children are fairly well matched in preparation and ability.

Mental Defectives Are Unfit Associates for Normal Children.

The next point has to do with the welfare of the great majority of children in the schools—those who are normal. I have just mentioned the fact that their scholastic progress is retarded when they have to wait for the sub-normal, but there are other ways in which the sub-normal may be detrimental. Two or three examples ought to make the matter clear. Here is a boy, thirteen and a half years old. He looks big and strong, but he has the mentality of a child eight years old. He is said to take delight in cruelty, he enjoys hurting his little sister. Here is another boy, fifteen years and eight months old, with a mental age of eight years and a half. He is a big shuffling fellow whose history card shows him to be under the care of the clinic for syphilis. These boys are not desirable companions for any children, but for the young children who must be in the same classes with these defective adolescents there is both physical and moral danger. Again I recall the case of a girl of twelve with the mentality of a child of seven. This girl's sex habits were so uncontrolled that her teacher told me she was obliged to tie her hands behind her during school hours. That girl is no fit companion for little children. It is mentally and morally unwholesome to have these defectives setting such examples. Just because they are older and bigger and more experienced, it is natural for the younger children to imitate them.

The Duty of the Community to the Sub-Normal.

The question of locating and separating the sub-normal is not merely a school affair. It is important for the community to have an early diagnosis of its defectives. It is far better to find out who the feeble-minded are while there is still a chance to protect them from themselves and from those who will make unscrupulous use of them. The risks are so well described by Dr. Walter Fernald that I can not do better than to quote his words. ("Mental Hygiene," January, 1917.)

The brighter classes of the feeble-minded, with their weak will power and deficient judgment, are easily influenced for evil and are prone to become vagrants, drunkards and thieves. The modern scientific study of the dependent and delinquent classes as a whole has demonstrated that a large proportion of our criminals, inebriates and prostitutes are really congenital defectives, who have been allowed to grow up without any attempt being made to improve or discipline them. * * * As a matter of mere economy, it is now believed that it is better and cheaper for the community to assume the permanent custody of such persons before they have carried out a long career of expensive crime.

The tendency to lead dissolute lives is especially noticeable in the females. A feeble-minded girl is exposed as no other girl in the world is exposed. She has not sense enough to protect herself from the perils to which women are subjected. Often sunny in disposition and physically attractive, they either marry and bring forth in geometrical ratio a new generation of defectives and dependents, or become irresponsible sources of corruption and debauchery in the communities where they live. There is hardly a poorhouse in this land where there are

not two or more feeble-minded women with from one to four illegitimate children each. There is every reason in morality, humanity and public policy that these women should be under permanent and watchful guardianship, especially during the child-bearing age. A feeble-minded girl of the higher grade was accepted as a pupil at the Massachusetts School for the Feeble-Minded when she was fifteen years of age. At the last moment the mother refused to send her to the school, as she "could not bear the disgrace of publicly admitting that she had a feeble-minded child." Ten years later the girl was committed to the institution by the court, after she had given birth to six illegitimate children, four of whom were still living and all feeble-minded. The city where she lived had supported her at the almshouse for a period of several months at each confinement, had been compelled to assume the burden of the life-long support of her progeny, and finally decided to place her in permanent custody. Her mother had died broken hearted several years earlier.

The moral of all this is, that by using mental tests as a regular part of school routine these boys and girls can be identified before they reach maturity. Their difficulties and dangers can be anticipated, without waiting for them to become court cases.

What Is California Doing for Her Children?

Psychological work is already in progress in several centers in this state. These are chiefly in a few cities—Oakland, San Francisco, Los Angeles, San Jose, and perhaps a few others—and in the juvenile courts and the reformatories. But these enterprises are merely local, and what is needed is a policy which shall affect every school district in the state. We have in this state one city with a system which in my opinion might well be taken as a pattern. In the city schools of Los Angeles there is a well worked out plan for the classification and training of large numbers of atypical children. Dr. Sutherland, the head of the psychological department, has carried out here a brilliant piece of constructive pedagogical work, and I only wish that the State of California could have for all of its children the opportunities which are an accomplished fact for the children of Los Angeles.

The Laws of New York for "Children With Retarded Mental Development."

It may be necessary to secure legislation before we can expect this service. But if so, the laws of New York State could furnish us with an excellent model. I have a copy of this law, and with your permission I should like to read its provisions for "Children With Retarded Mental Development."

1. The board of education of each city and of each union free school district, and the board of trustees of each school district shall, within one year from the time this act becomes effective, ascertain, under regulations prescribed by the commissioner of education and approved by the regents of the university, the number of children in attendance upon the public schools under its supervision who are three years or more retarded in mental development.

2. The board of education of each city and of each union free school district in which there are ten or more children three years or more retarded in mental development shall establish such special classes of not more than fifteen as may be necessary to provide instruction adapted to the mental attainments of such children.

3. The board of education of each city and of each union free school district, and the board of trustees of each school district which contains less than ten such children may contract with the board of education of another city or school district for the education of such children in special classes organized in the schools of the city or district with which such contract is made.

If we could have such a law as this, or if local boards would now act upon its principles, as it is their privilege to do, the schools and the communities of the state would realize that these provisions are indeed a measure for the public good.

THE PUBLIC HEALTH NURSE AS AN ADJUNCT TO THE HEALTH OFFICER.*

By GENEVA S. ORCUTT, Children's Agent, California State Board of Control, Sacramento.

The public health nurse as an important adjunct to the health officer is a fact well established in our most progressive communities today, and those which have not advanced accordingly along this line will find only too soon that this educational and economic community need can not remain unprovided for. These are the days when we must save the most lives with the least money. Ever since the days of Sara Gamp there has been needed in every locality some soul who could be called upon in times of physical distress. The evolution of the fulfillment of this need has passed through many stages and is a long story, and it is with only the last chapter that I am dealing today.

Since the first variations of bedside nursing were publicly made manifest, no other phase of the work of this profession has ever advanced in the same rapid and widespread form.

Previous to 1912 we had but two classes of nurses doing other than regular bedside nursing. These were termed "visiting" and "district" nurses, and at the American Nurses' Convention, held at Chicago in 1912, the National Organization for Public Health Nursing was organized, and we began to put in active use the term "public health nursing."

Qualifications for a Public Health Nurse.

For a nurse to be eligible to a position in this particular field, she must first rank as a graduate from a reputable school, in which she has received a good general training and a thorough knowledge of the care of the sick. Her state registration should follow, and, in addition, her capabilities should be those of a teacher of hygiene, as well as of the prevention of disease. Her ability to look for causes outside the patient and family must also be evident, and she must be able to appraise what part the community plays in the matter of health and disease. It is necessary that she know how to study a community from every angle and that she become most efficient in determining which factor—social or sanitary—is at the root of her special problem. For instance, she must be able to realize that individual families are not to blame for having typhoid fever, but if a community permits sewage disposal to be conducted in an unsanitary manner, or known cases to go unreported, the responsibility is a civic problem.

In order to acquire the ability to discern any of the above conditions, it is not enough that the public health nurse have just her training school education. One of our prominent educators has said: "The graduate nurse makes the good raw material with which to make an excellent 'public health nurse.' " Therefore, in addition, she must have acquired some special training along the lines of health department activities, as well as the various phases of social economics. Her training must also include the principles of hygiene, bacteriology, physiology, sanitation and general visiting nursing, in order that she may turn out the "all round worker" that she needs must be.

Of all the women who have pioneered in public health work, only a few have had the advantage of the courses given in our colleges. Our own University of California gave instruction in two summer sessions, and during

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last year two established courses in the regular college curriculum have been carried on, thus allowing numbers of young women to prepare themselves to step out into our rural communities and inaugurate this important work.

The Public Health Nurse and the Health Officer.

The most numerous calls at present are in the field of medical school inspection, and what better way is there for a worker to become introduced into a family or a community than through the children and the school? What greater aid has a health officer, rural or municipal, than the nurse in the school, who is on the constant lookout for communicable diseases, as well as all problems of general sanitation? Many of these are to be remedied outside of her own province, but she is frequently the first to discover them.

Here precisely is the public health nurse the necessary adjunct to the local health officer. Here, the nurse performs a service belonging not only to public health, but also to education—both of them highly active social movements. She makes routine class inspections for cleanliness and skin eruptions. She assists the medical inspectors, where a community is so fortunate as to have such a service, and if this service does not exist, she makes such examinations as are within the bounds of her own profession. In either case, she does the follow-up work that makes it effective. She takes children to the clinics, bringing them in line for all kinds of corrective treatment; also reports to the proper authorities any errors in sanitary conditions, such as overheating, bad lighting or improper ventilation. She reports all communicable disease findings at once to the health department, thus making isolation and treatment effective in the earlier stages. Her efforts aid greatly in the compiling of accurate vital statistics, and her value as a teacher to the children of health chores and hygienic means of living, along with some first-aid instruction, makes her a valuable member of the teaching corps.

The Scope of Her Work.

Her duties also include home visiting and instruction to parents regarding the welfare of the children, and, as Dr. Winslow recently said: "There is just one kind of education that really gets over, and that is the message that is carried from one individual to another at the time the second individual is sick, or some one else in the family is sick, and they are all ready to learn what to do to get well." The nurse who imparts this instruction is our best medium of the dissemination of the "gospel of health."

In her home visits she finds the tuberculous adult, as well as the predisposed child who attends her school. She arranges for their clinic care, or if such is not possible, she leaves instructions for the sane and proper care of the infected individual.

Infant welfare work also comes within her scope, for when once the public health nurse is a visitor into a home and has once proven a friend to the family, the appeals to her for guidance are innumerable.

In the venereal disease campaign, the nurse has played an ever-increasing part, both to the unfortunate individual and the community. She has been most actively engaged in assisting in their clinical care, as well as in their social rehabilitation, which necessarily must follow.

In order to complete the solution of the problems arising from any of the above phases of our public health nurse's work, she must obtain a detailed knowledge of the existing social agencies within her midst. Today one is judged by the number of auxiliary agencies upon which he can call for co-operation in his own field, and it has been proven that it frequently requires the experience and equipment of several agencies to discover what

has gone wrong in one family, and perhaps an equal number of agencies to rehabilitate that family to normal living.

Another asset is a personal acquaintance with the workers in each of the private or public agencies, with which she co-operates, and this acquaintance is better gained by her affiliation with the nursing and social organizations in the community.

The public health nurse having made her entrance into the family, on the ground of health conditions, is at the same time on the lookout for contributory causes of illness, realizing that sickness is one of the forerunners of dependency and domestic difficulties, as well as other troubles.

The discoveries made regarding casual factors of disease, and the marvelous methods used for allaying human suffering and the defeating of disease, are also a necessary part of her social education.

The Rural District's Need.

Perhaps the greatest need of all at the present time is that of the public health nurse in the rural districts, and by this we mean small villages, with the scattered country between and the small neighborhood towns. Here, the prevention of tuberculosis alone requires more thought, experience, judgment, persistence and money per capita than in any large city. Difficulties that are met arise from less highly developed local government, less expert and effective health officials, less inclination to be governed, less voluntary organization for practical social work, and deep-rooted ignorance and belief in the heredity and fatality of tuberculosis.

For years past the public at large has labored under the opinion that the health and living conditions of people in general in the country are far superior to that of the crowded cities. But now this is a proven fallacy. The draft statistics gathered during the war period, and those compiled during the Children's Year by the weighing and measuring contests conducted all over this country, indicate that there are a large percentage of rural children who are considerably under-weight, and who are also the victims of physical defects. These can be accounted for in many ways which are remedial.

In these communities, the health officer frequently is a layman. Sometimes the education required for his business is so far removed from the knowledge necessary to conduct health activities that he is decidedly at a loss when epidemics and sanitary problems arise. Under these conditions the public health nurse would prove more than an adjunct to him, in that she has the knowledge which permits her to assist him in quarantining and placarding in cases where the need is indicated. She is able to impart the proper knowledge to the contacts of such cases, and at the same time can give instruction in the avoidance of infection. She could also fill out blanks and send in the required data to the State Board of Health, and thereby complete the necessary records that are frequently so hard to obtain.

Although her work combines many duties, she is frequently the one nurse in the field, and therefore must take the lead in group talks to mothers and prenatal instruction, also the management of health centers, if such can be arranged for. Her advice regarding necessary dental work, both for the adult and the child, is no small part of her duties. In fact, the boundary of her activities can hardly be defined.

Attitude of Physician to Public Health Nurse.

The attitude of the physician, and especially of the health officer, to the public health nurse is an important thing. She is absolutely powerless without their support. As heretofore, few medical men have possessed public

health training. They were prone to look upon this innovation with prejudice and suspicion. Some have gone so far as to ignore her ability to gain great good from attending conferences, symposiums, medical meetings or special lectures. But the large attendance of both health officers and public health nurses here today proves decidedly that co-operation between the two is becoming perfectly developed. It is through the physicians that the public health nurse can be most effectively established and aided, and because of the long list of requirements that her makeup must embody, she needs their most earnest recognition and support.

In closing, I beg you to profit by the following anecdote told by Miss Foley of Chicago. It runs as follows:

"Once upon a time an anxious parent telephoned a hospital and asked for a nurse for a sick child. He wanted a good woman, fond of children, kind to animals, considerate to servants, low-voiced, tactful, gentle, strongbacked, French speaking and a Baptist, if possible." That she should know something of nursing did not seem to have occurred to him. And so it is today—boards of school trustees, supervisors, health departments and other officials want the public health nurse, and they want her as near the ideal as possible. Therefore, it follows that as long as public health is a matter of "education of the people," our laws proving secondary, that it is through the health officer and his adjunct, the well-trained public health nurse, that much of this education can be brought about.

MENTAL EXAMINATIONS AS AN AID TO PEDAGOGICAL METHODS IN THE PUBLIC SCHOOLS.*

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Mental examinations are coming into such wide use as aids in caring for various classes of children, that a discussion of their scope, their value, and finally, illustrations of their practical application to special school problems, must be of interest to all who are concerned with the care of children, as well as of very special interest to those whose main concern is public health in its widest sense.

A mental examination, as ordinarily given at the present time, includes far more than the actual testing, by more or less stereotyped methods, the performance of children in response to a set group of mental tests. To be sure, the so-called "intelligence test" is an important part of the whole procedure and is justifying day by day the confidence which workers have placed in it. Some form of a mental age scale is employed usually as a routine measure and serves as a fair indication of the child's ability to perform certain simple acts which serve as an index to his general ability. By such a scale, the child's mental level is roughly determined—that is, his mental age is found—or to be more explicit, a comparison is made of the child examined with the average child of his age. For example, if a child of twelve years can do only those things which the ordinary child of eight years can accomplish, that child is said to have a mental age of eight years. He is actually twelve years old, but his mental ability is only that of an eight-year-old child.

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Experience in the examination of thousands of children has gone to show that when a child is more than three years retarded in his mental ability, that that backwardness is serious and permanent and that the child in question will never be able to compete with normal persons under ordinary conditions.

But an age scale, such as has been briefly described, of which the Binet scale is the most commonly used in some of its forms, is not in itself sufficient to determine the actual mental status of an individual. Certain factors may enter in and serve to make this method alone inadequate, or misleading. For example, a child in whose home a foreign language is habitually used, will probably fail to use the English language as readily as will the child from an English-speaking household, and hence will appear less capable if tested without taking this one fact into consideration. Again, there are many children found among the failures in life, whose main difficulty consists in a serious nervous instability and a lack of mental and physical control. These children frequently fail in tests because of restlessness and poor attention, and hence give the impression of having poor intelligence, whereas the real difficulty lies in their failure to make use of such ability as they have. Then, too, ill health may make a child apathetic and slow mentally, so that the results of a mental examination may be quite unfair, unless supplemented by a careful consideration of his condition otherwise. And, finally, the home training of the child has an undoubted effect on the quality of his performance. The dull child from the careful home may have been drilled and coached systematically until he makes a far better impression than his real ability deserves, while an untrained child may make a poor impression because of the lack of formal opportunities in his home. So if a mental examination is to be of real assistance to the individual child's problem, it is necessary to consider all of the other factors involved in making him what he is. Hence, the child is further questioned as to his interests, his amusements and as to the special advantages which he may have enjoyed outside of the school. He is also tested by being given mechanical and manual tests, so that, if a foreign language is interfering with his ability to answer questions well, he will still have an opportunity to show what he can do without the use of language. It is also of the greatest value for the examiner to have experience in the observation of individuals from the physical standpoint. It is a remarkable opportunity for a physician to observe, during an hour's performance, the appearance, attitude and manner of the child being examined. Many a small point becomes noticeable which may be overlooked even in a physical examination, and it is rare that a child will be suffering from much of a physical handicap, without its giving distinct evidence in his work or behavior. Then, added to the facts obtained from the child, there must be information from others with whom he comes in contact as to his general character and his relation to other children and as to his home surroundings, with special reference to the social and moral standards of his parents or relatives. So it will be seen that the individual mental examination, to be satisfactory and fair, is a comprehensive thing, corresponding more and more with the tendency to judge of feeble-mindedness by social standards rather than by mental or intellectual methods alone.

Such a mental examination as has been described here must necessarily consume a considerable amount of time, not only in the matter of obtaining the necessary facts, but also in correlating and weighing them in making plans for the child. Ideally, every child in the schools should be given just such a thorough study, but while this work is still new and where the workers available are so few in number, it is, of course, quite out of the question for

the majority of school children and, hence, must be reserved for those who are failures or who present such obvious peculiarities of one sort or another that special plans are quite necessary for that child's care. There are occasions, however, when wholesale examinations of entire schools or districts are desirable, when a rough determination of the extent of serious mental deficiency is the end to be sought. For this purpose, briefer and much more rapid and mechanical methods may be used, and although the results in the case of certain individuals may be inaccurate, still the situation as to actual feeble-mindedness in the entire group can be determined with fair accuracy. If all children who make a satisfactory record in these more superficial surveys are then excluded as being presumably normal, those who fall below a certain rank may be examined in the more careful and intensive way and special plans may then be made for their necessary care or treatment. Such a study would constitute a satisfactory survey of the school children of any community.

The value of standard and more or less exact methods of comparing the performances of children is obvious. A careful mental examination will help greatly in setting standards to which the individual child should be held. The complaint is sometimes made that children are lazy, that they could do certain tasks if they would, and hence the child may often be blamed by a teacher for wilful lack of effort, when, in reality, he may have some special disability or inability which effectually prevents his acquiring certain types of knowledge with ordinary ease. A child may fail of promotion again and again because one or two subjects are difficult for him, even though his ability is for the most part quite as good as the average. A careful examination may indicate special inaptitudes and may at the same time establish the fact of his real ability along other lines, and an adjustment of the school program to care for his needs may help to add another responsible citizen to the community, rather than to develop an individual whose mind has been trained to accept the idea that he is a failure. It is a very unfortunate thing for any child to get into the habit of failing and of accepting the fact that only failure is to be expected of him.

A mental examination will also aid greatly in pointing out those children who are beyond question feeble-minded and who should be under close supervision for the rest of their lives. Such a child as one of these is entirely out of place in the ordinary schoolroom. He uses up a great proportion of the teacher's time, and as a result those other children who are later to become the responsible, self-supporting citizens are neglected. This is not only quite unfair to the normal children and their parents, but is quite obviously foolish and extravagant.

Another, and an important value of mental examinations, is in their use for the purpose of refuting hasty judgments as to the presence of mental defect on the part of children who may be troublesome in the schoolroom. When a teacher is worried by a badly crowded school, it must be a great temptation to wish to get rid of troublesome children, and it seems to be becoming quite customary to judge a child as mentally incompetent as soon as he becomes a disturbing element. It is undoubtedly an important advantage to point out the fact that such a child is not a defective. He may be erratic and untrained or his home life may be having a bad effect on his ability to do any effective mental work, but although these troubles may often be associated with the presence of mental defect, still a child may be a misfit without being feeble-minded, and it is then the responsibility of the teacher to remedy, in so far as is possible, those things which cause failure, rather

than to feel that the child must be gotten rid of because, if he were not defective, he would not be so troublesome.

Thus far, in San Francisco, the plans for caring for defective or unusual children have not been developed very extensively, but such provisions as have been made are on a sound and permanent basis and the possibilities of expansion from time to time are good. There is one ungraded school, under the Board of Education, situated in a poor and foreign part of the city, to which children from all parts of the city have access. This school is a thoroughly modern institution for defectives of the more serious type, and contains for the most part children who will be inevitable social failures unless given permanent supervision. This school, with five rooms and a capacity for training seventy defective children, gives a most excellent opportunity for close observation and study of the children attending its small and intensive classes. It can scarcely be possible for a youngster to leave such a school without its having been estimated fairly accurately what his capacities are and what can be expected of him as an adult. Besides this school, there are five special classes which care for defective children in other parts of the city, where the greatest need arises. The ungraded school and the special classes are under the same general supervision and control and the same methods are used in all. In fact, the main ungraded school is used as a training school to prepare interested teachers to take charge of special classes for defectives. In this way provision is made for a satisfactory increase in the number of workers who will be able to teach abnormal children. In all, approximately 140 children attend the ungraded school and the special classes, and nearly all of these children are very seriously retarded mentally.

In addition to these classes which care for the institution type of defective children mainly, there are several other classes which go by the name of "opportunity classes." In these classes there are to be found children of a much higher grade of mental ability, but for whom the regular work of the upper primary grades is too difficult. Many a child begins to hold back when he has gone as far as the fifth or sixth grade in school, and if held to the standard possible for the average child and the bright child, will absolutely fail to finish his grammar school work and will leave school, branded as a failure. For just this type the opportunity class has been developed, and its aim is to give to the child special elementary drill in those subjects which will be of the greatest practical value to him later in life, so that he will have the fundamentals of a grammar school education, and to omit such special subjects as music, drawing, foreign languages and the like, all of which have their great value, but can better be omitted than can such subjects as reading and arithmetic. The child may in this way be carried along and may learn in his slower way much more than he could possibly get when surrounded by brighter children and confused by the more complicated curriculum which makes school work most interesting to the child without mental limitations.

The actual systematic work of caring for the mental examining of special and defective children in the San Francisco public schools has been undertaken by the Department of Public Health and is under the supervision of a medical psychologist, trained both in medicine and psychology. Thus far the work has of necessity been on an experimental basis and has been more in the nature of emergency work, rather than actual systematic study of conditions over the city. The ultimate object will, of course, be a survey aiming to study conditions over the entire city, but the workers are still very few in number and the population of San Francisco is large, so that such a task is still somewhat in the future. At present, careful mental examinations are

being made of such children who constitute a special problem or who are failing systematically to make such progress in school as is possible to the average child. Lists of such children are made out by the teachers and turned over to the psychologist and mental examinations are then made as speedily as possible. On the basis of the psychologist's recommendation, children may then be placed in one of the ungraded classes for low-grade defectives or in one of the opportunity classes for the dull but on the whole normal children. When the bulk of this emergency work has been completed, plans will be made to make a more systematic study of all of the children in some of the poorer districts where the greatest amount of school retardation exists. Then, gradually, it is planned to increase the work as opportunity arises until a study of the public schools of the whole city has been completed. Plans are already in the process of making toward this end, although the actual work has not as yet been begun. There is fairly close co-operation with all other public agencies, and when necessary or desirable the assistance of the juvenile court, of the clinics and hospitals of the city is asked and given freely. Work of this sort, to be far-reaching in its results, must be well known and understood in the community, and the larger the number of individuals and agencies concerned in the care of defective children the greater will be the understanding of the problem and of the need for care and protection of these unfortunates, both for the sake of the abnormal child and for the protection of the community from unnecessary poverty, vice and criminality.

During the first year of work in this department there were 363 children examined in ten of the public schools. With the exception of the children examined in one of the large intermediate schools, all were referred as defective or very peculiar children whose removal from the ordinary grade room was deemed by the teacher as being very desirable.

Only one survey which could be called at all systematic was attempted, and that was at one of the large intermediate schools whose population is nearly one thousand children, all of them in the sixth, seventh and eighth grades. This school was selected at the suggestion of the Board of Education, because of the very great interest of the principal in mental examinations.

REPORT UPON RESULTS OF PSYCHOLOGICAL EXAMINATIONS GIVEN THREE GRAMMAR GRADE CLASSES.

The general purpose of this particular investigation was to throw some light and to offer some practical suggestions, if possible, upon the problem of eliminating the wastage to the teacher, to the child and to general educational efficiency which occurs in all school work where those to be instructed include so many types of mental makeups, so many strata of mental capabilities.

The specific purpose of the investigation was fourfold.

1. In the first place, to find those children who are so far mentally retarded or deficient that they are unable to profit by the regular work of the classroom. These children—and every teacher who taught in the elementary or grammar grades has run across this type—are wasting time and energy in a variety of ways:

- (a) In trying to do what they are incapable of doing.
- (b) By not receiving the special training which they are capable of taking.
- (c) They are a drain on the teacher, who must of necessity give disproportionate attention to these unfortunates who, mentally below par, have no alternative other than being a drag on the class.

(d) Their presence in the regular class is a great disadvantage to those children who are able to profit by regular school work, but who do not get the maximum of benefit from their school experience because the teacher can not give them due consideration.

The obviously economical thing financially and educationally from the point of view of the teacher, the normal child and the mentally defective child, is to locate and segregate the defective or subnormals into classes where they may receive such practical instruction as they are capable of profiting by.

2. A second aim was to discover those children who are capable of profiting by their regular school work, but who because of some peculiar defect or being innately slow or dull can not keep up with the average speed of the regular class, and who need special help to carry them along. Often it develops that a child of this type who can never do regular academic work well shows relatively good mechanical ability. If, in addition to this, the financial status of the home requires that the lad shall go to work when finishing the grammar grade, his schooling will mean the most to him if it has given him training along mechanical or vocational lines. In his case less emphasis can be laid upon abstractions which are extremely difficult for him to grasp and more emphasis upon practical concrete problems and training. Again, it would appear that a maximum degree of benefit would accrue by grouping this type of children, giving the boys the advantage of additional shop work and the girls additional sewing and cooking, and to both special drilling in such academic work as would be of value to them. And among this group, as in the other groups, special help could be given to the boys or girls who showed some peculiar disability. For example, in the case of a child who had a very poor auditory memory and a fairly good visual memory, it could be suggested to the teacher that a greater preponderance of visual explanation would enable the child in question to grasp the idea more quickly and to hold it more accurately. And again, special help and stimulation could be given to those children who showed on investigation some peculiar or special ability which might be stressed to the advantage of the child.

3. A third purpose was to locate those children who were doing poorly in their school work because of no mental disabilities or deficiencies. That is to say, if the school report showed unsatisfactory scholarship and the psychological examination showed the child to be of normal intelligence an effort could then be made to locate the source of the difficulty.

Perhaps the trouble might have a purely physical basis (or a partial physical basis), as for example defective vision or defective hearing, or adenoids or infected tonsils. Again, the unsatisfactory school report might be due in part to an incomplete recuperation from some severe illness, such as influenza, for example, or again it might be due to some debilitating habit which had a physical basis. *Any* child who showed any obvious need of a physical examination or whose mental performance suggested that a physical examination might throw helpful light on the case was recommended for such an examination.

Again, the cause of the trouble might lie in irregular home conditions—poverty, viciousness, improper supervision, etc. For example, take the case of one girl in the sixth grade who said that she went to the movies or to the beach every night. Lax home supervision of that type would necessarily react on her school performance.

4. Again, it was a purpose of this investigation to discover those children with intelligence above the average that they might be given instruction according to their abilities and not be held back to the speed and type of work that fitted the average.

The work was undertaken with the assurance that psychological examinations, including intelligence tests, performance tests and the gathering of information concerning the child's home conditions in conjunction with his school report could help in making these above-mentioned segregations which seem so educationally desirable. But that others, not familiar with this short-cut method of classification, might share this assurance, it was necessary to show the practicability of the tests, to compare the teacher's estimate of the child's success in his school work with the psychologist's estimate on the basis of intelligence tests.

To make this comparison as accurate as possible, the three classes examined were selected from one school. Similar school conditions, gradings, method of instruction, etc., would maintain; hence, results would be more accurately comparable. The school was the Horace Mann Intermediate, located in the Mission District, in which no special foreign element predominates, as in some sections of San Francisco. Departmental work—different subjects taught by different teachers—being the method of instruction, meant that the scholastic estimate which would be used as a basis of comparison would not be one teacher's judgment, but the combined judgment of several teachers.

I. Group One.

The first class to be examined was a special class of fifty children, ranging in age from 13 years to 17 years, the majority of whom were either 14 or 15 years, respectively. This special group of fifty children had been segregated into a special eighth grade class by reason of the fact that in some respect their school performance was below average. For the purpose of giving them more individual help and coaching, by teaching them in small sections they had been grouped together, and then subdivided into small reciting groups, one group stressing arithmetic, another grammar, etc., according to the subject which required additional study on their part. This segregation had been in process since as sixth graders these children had entered the school, covering a period of two or two and a half years and based on the definite failure of the child.

There were two reasons for selecting this group to examine:

(1) To discover the causes of their poor scholarship and thereby throw some light on the child's peculiar abilities or disabilities which might be of practical assistance in the handling of his or her case.

(2) Being problem cases, they had demanded special observation on the part of the teachers, and hence were better known than the average child. Therefore, the teacher's estimate and that of the psychologist would form a particularly interesting comparison.

A few words of explanation as to the nature of the examination:

Each child was examined individually.

The following information other than that elicited by the intelligence tests themselves was obtained in each case, in order that the recommendation might be based upon as full a knowledge as possible of the child's complete environment—his home, school and social relations:

(1) Nativity of child. (Special considerations in the case of the immigrant child are necessary.)

(2) Nativity of the parents. (The child of the foreign-born parent who does not become Americanized as quickly as the child presents an abnormal home condition.)

(3) Occupation of the father and mother. This is often suggestive of the economic status of the family, whether there is plenty or actual want in the home.

(4) Information as to whether the home is normal, in that it is not broken by the death, desertion, or separation of the parents. If the father is dead it often means that the mother must work away from home and that the children of necessity are left unsupervised and without proper care. The loss of a mother may mean that the home is broken up or that a girl in the family has to bear the burden of the housework in addition to going to school. Home conditions are bound to influence tremendously the child's school performance. Allowance must be made for the child from an unsatisfactory home. This information in the hands of the teacher, she may ease matters considerably and let her helpful influence be carried into an unfortunate home.

(5) Information as to the health of the family. A record of tuberculosis in the home, for example, in the case of a child who shows early signs of mental fatigue during the examination, would indicate the need of a physical examination for a possible T. B. in the child.

(6) Information was secured as to what the child intended doing upon finishing the grammar grades. Did he intend to go to high school, to business college, or to work? If to work, what sort of work? A child who either by force of economic necessity, or because of disinclination to go further, intends to quit school when he finishes the grammar grades or when he reaches the age of non-compulsory school attendance presents a somewhat different educational problem than the child who intends to go to high school and college and become a brain worker rather than an artisan.

(7) The child was also questioned as to his interests—occupational, recreational, etc.; inclination or interest in doing mechanical work where native mechanical ability existed might advantageously be focused into actual intention. On the other hand, a girl who wanted to become a stenographer and showed no manual dexterity and a marked inability to react quickly should be discouraged from attempting a line of work at which she could not succeed.

This information, together with the results of the intelligence tests (which cover a variety of mental performances), and several mechanical performance tests, was used as the basis of discussion with the teachers and the principal—as to what would be the best educational suggestion for each child considered individually. As a result of these conferences the pupils were regrouped and rearranged.

Results of a comparison of the teacher's estimates and the scoring of the tests in regard to this special group of fifty children:

Of the children who graded relatively low by the tests all were doing poor work in this special class. There were in this class some five or six who showed intelligence of a good order. One of these, and the only pupil of the entire group concerning whom the teachers and the examiner differed absolutely, was a lad who was doing extremely unsatisfactorily in school work. His performance in the intelligence tests showed that he could do relatively difficulty things which a child of defective intelligence could not do. He was examined last term. This term the teachers report that he is doing very good work. Some other factor—probably a lack of interest in his school work typical of the adolescent lad some time or other in his

school career—was keeping him from doing the type of work of which he was mentally capable.

The other children who by the tests graded somewhat above average were children who were having special difficulty in one subject, and that subject was arithmetic.

Conclusions. The investigation of this special group showed enough, that—

(a) The backward child in school could easily be picked out.

(b) That the same results for which the teachers and principal were compelled to spend from one to two and a half years could be done on the basis of psychological examinations at the rate of one pupil per hour and a quarter (the average length of an examination).

(c) And this without the necessity of the child suffering the discouragement of failure and coincidently the actual loss in not receiving the type of training which he was capable of taking.

II. Group Two.

The next group to be examined was a regular eighth-grade class which pedagogically was adjudged to be an average class. This class was chosen for the purpose of ascertaining whether or not the intelligence tests would be as accurate in locating the child who was doing excellent work in school as it had been in locating the backward child. The same program was followed as in the special class. The same span and type of information was ascertained in each individual case.

The tabulation below shows the interesting relation between the intelligence score and the gradings given by the various teachers. The psychological gradings have been roughly divided into three groups.

- (1) Those having a mental age of 15 years. (Above average.)
- (2) Those having a mental age of 12 years. (Average.)
- (3) Those having a mental age of less than 12 years. (Below average.)

Comparison of Mental Status and School Report.

Mental age	Number	Excel- lent	Good	Fair	Unsatis- factory	Pro- moted	Not pro- moted	Promoted on trial
15 -----	17	11	3	2	1	17	0	0
12 -----	19	1	6	7	12	12	2	5
12 -----	10	0	0	1	9	1	7	2

Remarks.

- (1) Seventeen out of a class of 46 had a mental age of 15 years.

(a) 11 out of the 17 were doing excellent work.

(b) 3 were doing good work.

(c) 2 were receiving one or more "fair" marks.

One of these was a lad having difficulty with arithmetic.

The other, a girl, was a discipline case and her poor marks were definitely due to her deportment.

- (d) One lad of this group was receiving unsatisfactory marks in arithmetic and deportment. The low grade in arithmetic was absolutely traceable to his poor conduct, because he was able to do when tested individually relatively difficult arithmetical problems.

The important thing to note is that out of this group of 17 *all* were promoted unconditionally.

(2) Of the second group grading 12 *years* by the Binet scale there were 19.

(a) Only one of these was an excellent student—a lad of 13.

(b) Six were rated as good in their work.

(c) Seven were fair.

(d) Twelve were doing unsatisfactory work in arithmetic according to their grades. Five of these were receiving unsatisfactory marks in some subject other than arithmetic.

N. B.—Twelve out of the nineteen were regularly promoted. Five were promoted on trial. Two were held over and not promoted. (These two were Italian girls—natively slow but not sub-normal—who had missed considerable of the term's work on account of influenza. On the whole then, this group was doing passable work.

(3) Of the third group, those who graded *less than twelve*, there were ten.

(a) There was not an excellent pupil in the group.

(b) There was not even a good pupil in the group.

(c) There was only one who graded as fair—a girl of 13 who graded slightly under 12.

(d) All but one of the ten were doing unsatisfactory work, and that one was just above the line.

N. B.—Only one of this group was promoted. Two were *promoted on trial*, and these two are doing such poor work that they will have to be held over this term. Seven could not be promoted, even conditionally. All but one of this group then who graded below 12 years mentally were not doing passable work.

Conclusions on the results of a comparison of the teacher's estimates and those made on a basis of psychological examinations:

1. The correlation between the two estimates is extremely high, almost a perfect correlation, save for some three or four cases.

2. Those cases which do not closely correlate can definitely be explained by some other factor other than intelligence entering to interfere with the performance of which the child is mentally capable—as for example, sickness, absence from school to care for some one ailing in the home, deportment, or some peculiar mental disability. Those cases where there is an absence of correlation point to the need of further study of the particular child to find *why* the child's performance in school falls below what one should expect on the basis of his showing in the intelligence tests.

Is it due to physical condition?

Is it due to irregular attendance?

To unsatisfactory home conditions?

To some temperamental or emotional peculiarity?

3. The practical significance of the correlation means that a segregation and grouping necessary to educational efficiency which by present school-room methods requires one or two or more years and is based on the actual failure of the child, can be made on a basis of intelligence tests when the child enters the grammar grades, or preferably before then, without submitting the child to the discouragement of failure and the concurrent waste of energy on the part of the child and the teacher.

III. Group Three.

The next group to be examined was composed of fifty children who had been sent from various primary schools to a special class for backward children in this school. They were classed as fifth and sixth graders. The teachers in charge discovered soon after the term began that they had almost a hopeless mixture—children who could get nothing out of the work, children who were backward and could be helped, children who could do satisfactory work in a regular class and who had evidently been shoved by other schools into this class because they were discipline cases.

Psychological examination showed the following mental classification:

17 were feeble-minded. (That is to say, they show four or more years mental retardation.)

19 were classed as borderline cases—some of them potentially defectives. (These showed three years mental retardation.)

6 showed a mental retardation of two years.

4 showed a mental retardation of one year.

4 were children of normal intelligence.

The chronological ages of the group ran from 12 to 16; by far the larger percentage of the class were 13 and 14, respectively.

The report of the teachers showed that all the children who graded less than ten years mentally were complete failures in this class for backward children. They were incapable of doing even the most diluted fifth or sixth grade work. If they are to get anything out of their school training they must be given manual work, not mental work. There were sixteen of this group who graded less than ten years mentally, and hence should be transferred to a class for subnormals.

The four children who graded as normal were hard to manage in this class because the teacher could not keep them busy. They were boys who obviously were discipline cases, and should never have been put into a class with backward children.

The children who showed only one year's retardation mentally should be (and as a matter of fact have been) transferred to a class of average ability.

Those children seriously backward, now in a class by themselves, can be given the type of work they are able to grasp, and at such a rate as they are capable of taking it.

Finally, I feel that the results of one year's work along the lines indicated herein prove conclusively that there is a place for the medical psychologist in school medical inspection and justify the extension of the work we are trying to do, and is a strong argument against the promoters of our new state statute, which allows parents and others to protest against examination of their children, any number among which might be defectives and retard the greater mass of normal children.

MONTHLY BULLETIN

CALIFORNIA STATE BOARD OF HEALTH

Devoted to the Prevention of Sickness and Death

Entered as second-class matter, August 15, 1905, at the post office at Sacramento, California, under the Act of Congress of July 16, 1894. Acceptance for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 27, 1918.

Sent free, on request, to any citizen of California.

WILFRED H. KELLOGG, M.D., Secretary	. . .	Executive Officer
GUY P. JONES, Assistant to the Secretary	Editor

During a recent investigation into public health work in a California city, it was found that a Japanese midwife had attended twenty-seven births during a period of six months, each of which was reported to the local registrar within one week after the birth occurred, and in most instances the report was made the day following birth. In the same town there is a physician who attended twenty-five births during the same period. These births were registered from fifty-two days to nine months after the occurrence. Most of them were reported more than twenty days after the birth occurred and only two were reported within one week after birth. If birth registration were as complete for our own population as it is for the Japanese, there would be no complaint to offer.

Work is already started on the 1920 meeting of the American Public Health Association, which will be held in San Francisco. The exact date is yet to be determined, but the chairmen of the various committees have started upon their work in preparation for this important event. Every health officer in California is expected to attend this meeting, which will be attended by the most distinguished sanitary and public health experts on the continent.

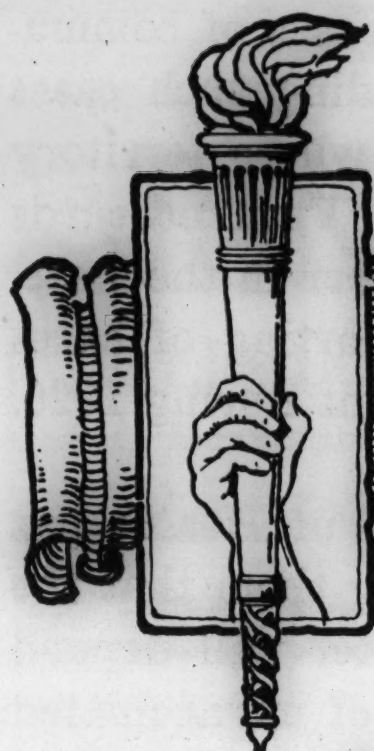
A new system of morbidity reporting goes into effect January 1. In co-operation with the United States Public Health Service, the Secretary of the California State Board of Health has been appointed a collaborating epidemiologist, and each health officer in the state has been appointed an assistant collaborating epidemiologist. Through

this procedure the franking privilege for reports of cases of communicable disease has been secured, and persons attending such cases are enabled to report same to the health officer in whose territory the case may occur without the payment of postage. Franked cards for this purpose may be obtained from any health officer in the state. It is believed that under this new arrangement reporting of cases of communicable disease will be improved 100 per cent during 1920.

Smallpox continues to increase. The State Board of Health has repeatedly issued warnings to health officers, advising them that the responsibility for the presence of smallpox this winter will depend upon the local community. Wherever large numbers of unvaccinated persons reside, it must be expected that smallpox will appear, for the disease has not been so widespread in California since 1913 as at the present time. The appearance of smallpox does not reflect credit upon any community. An outbreak of the disease results in undesirable publicity, and causes a serious handicap in the work of the public schools.

The new Bureau of Child Hygiene will be at work in December, and by the first of January the Bureau shall have entered upon its program for the conservation of child life in California. While the work of the Bureau will be confined largely to work among children of pre-school age, it will also be prepared to devote its energies to older children whenever necessary. There is no more important work in public health than the conservation of child life. Conditions in California are naturally favorable to the rearing of strong, healthy, intelligent children, and the infant mortality rate for California is much lower than the same rate in most of the other states. With the support of all California communities, the infant mortality rate in this state should be reduced greatly. It should at least equal the low infant mortality rate that prevails in New Zealand.

The State Board of Health's work in malaria control at Anderson, in Shasta County, will be completed during the next few weeks. Governor Stephens allowed the use of emergency funds that were at his disposal for use in the eradication of malaria and mosquitoes from this district. Not only have large areas of land been drained and pools of standing water oiled in order to prevent the breeding of mosquitoes, but through the operation of a clinic more than 400 persons suffering from malaria have received treatment and a large number of active cases have been rendered non-infectious. The work has demonstrated the value of mosquito and malaria control in an infected district, and the people of Anderson may be counted upon to continue this important work that has been so well started.



"The maintenance of the growth of the individual is the chief requirement of the healthy growth of the state."

Communicable Disease

FRANK L. KELLY, M.D., Director
Bureau of Communicable Diseases.

MORBIDITY FOR OCTOBER, 1919, BY WEEKS.
L. E. Ross, Morbidity Statistician.

	Weeks ending—					Total, Oct., 1919	Total, Oct., 1918
	Oct. 4	Oct. 11	Oct. 18	Oct. 25	Nov. 1		
Anthrax -----							3
Beri beri -----							
Cerebrospinal meningitis -----		6		3	1	10	11
Chickenpox -----	42	38	51	76	92	299	120
Cholera, Asiatic -----							
Dengue -----							
Diphtheria -----	51	78	93	99	103	424	381
Dysentery -----	1		6	2	1	10	9
Encephalitis, lethargic -----			2		1	3	
Erysipelas -----	5	7	6	3	8	29	15
German measles -----	5	3	4	4	1	17	17
Glanders -----							
Gonococcus infection -----	104	86	97	101	90	478	478
Hookworm -----							11
Influenza -----	45	45	41	42	24	197	122,457
Leprosy -----	1	2			1	4	1
Malaria -----	92	57	41	44	24	258	83
Measles -----	75	84	112	107	194	572	494
Mumps -----	46	55	42	65	80	288	617
Opthalmia neonatorum -----			2			2	
Paratyphoid -----		2	2		1	5	
Pellagra -----					1	1	2
Plague -----							
Pneumonia -----	27	27	25	30	28	137	1,644
Poliomyelitis -----		2	1			3	9
Rabies -----							
Rocky Mountain spotted fever -----							
Scarlet fever -----	49	49	67	72	76	313	198
Smallpox -----	24	42	32	22	28	148	119
Syphilis -----	108	70	84	101	137	500	256
Tetanus -----		2	2	1		5	
Trachoma -----	3	4	1	3	2	13	6
Trichinosis -----							
Tuberculosis -----	120	111	189	110	128	658	766
Typhoid fever -----	21	35	26	25	32	139	105
Typhus fever -----		1				1	
Whooping cough -----	20	24	12	12	35	103	130
Yellow fever -----							
Totals -----	839	830	938	922	1,088	4,617	127,932

DIVISION OF EPIDEMIOLOGICAL INVESTIGATION.

Epidemiological Investigations and Other Special Investigations During the Month of September, 1919.

Main Laboratory at Berkeley.

An investigation of smallpox in Stockton.

An investigation of pneumonic plague in Oakland.

An investigation of botulism in Colusa.

An investigation of diphtheria in Manteca.

DIVISION OF BIOLOGICAL EXAMINATIONS.

Examinations Made by the California State Hygienic Laboratory During the Month of September, 1919.

Condition suspected	Positive	Negative	Inconclusive	Total
Anthrax -----	1	3		4
Diphtheria (diagnosis) -----	87	178	*11	276
Diphtheria (release) -----	99	126	†8	233
Dysentery -----		3		3
Gonococcus infection -----	38	36	40	114
Malaria -----	133	149		282
Meningitis -----		1		1
Plague -----	3	11		14
Rabies -----	3	4		7
Syphilis (Wassermann test) -----	79	449	48	576
Tuberculosis (sputum) -----	30	84		114
Tuberculosis (feces) -----	1			1
Tuberculosis (pleural fluid) -----		1		1
Tuberculosis (urine) -----		1		1
Typhoid (excreta) -----	2	8		10
Typhoid (Widal test) -----	26	69	10	105
Miscellaneous -----				5
Total -----				1,747

*7 no growth.

†6 no growth.

DIVISION OF PARASITOLOGY.

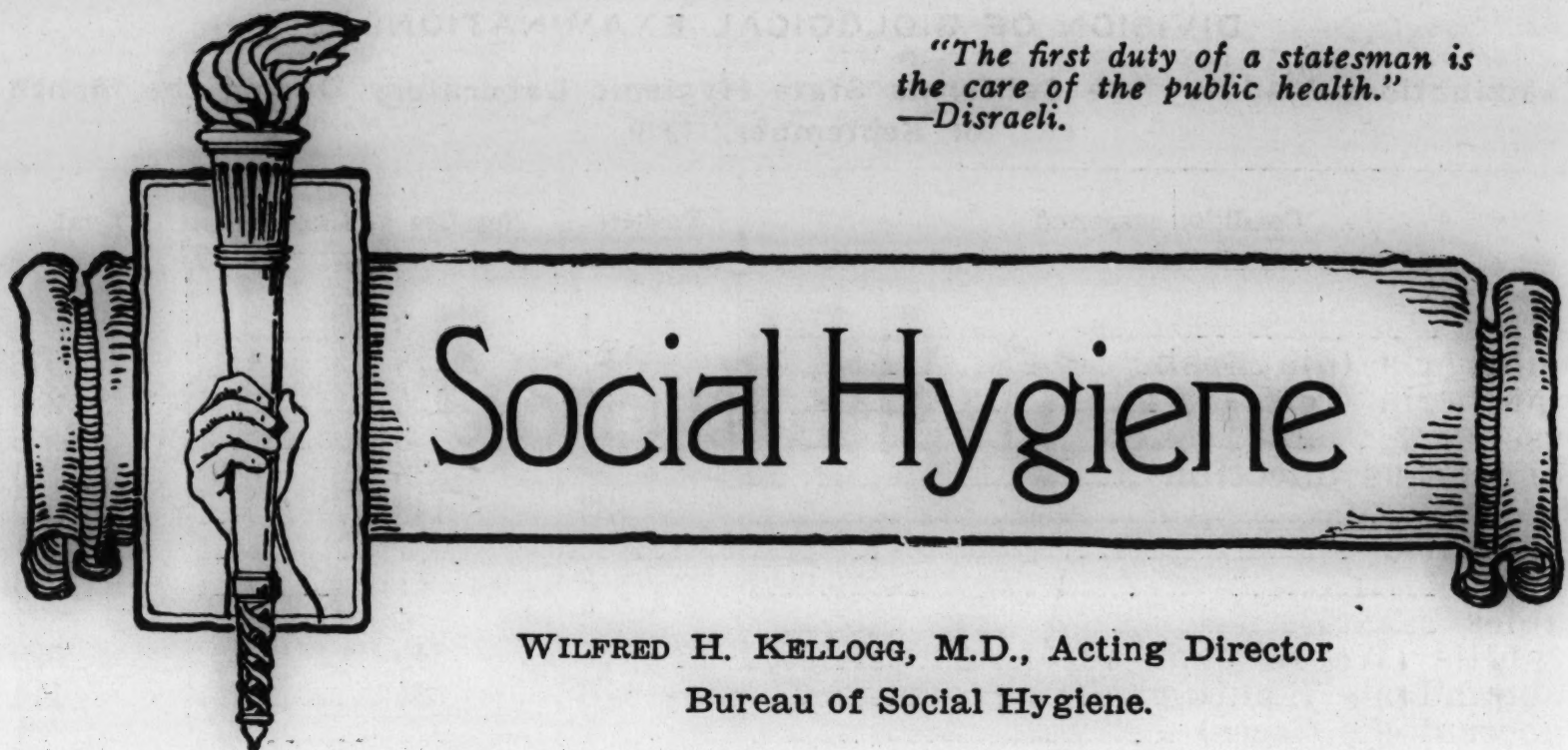
Summary of Examinations Made in the Division of Parasitology During September, 1919.

	Examinations			Persons examined		
	Positive	Negative	Total	Positive	Negative	Total
For worms—						
Fecal examinations made -----	33	137	170	32	126	158
Findings of—						
Clonorchis sinensis -----	1	169		1	157	
Hookworm -----	6	164		6	152	
Ascaris lumbricoides -----	13	157		13	145	
Oxyuris incognita -----	1	169		1	157	
Trichostrongylus orientalis -----	1	169		1	157	
Trichuris trichiura -----	14	156		14	144	
For protozoa—						
Fecal examinations made -----	63	108	171	57	105	162
Findings of—						
Chilomastix mesnili -----	6	165		5	157	
Giardia intestinalis -----	4	167		4	158	
Trichomonas intestinalis -----	1	170		1	161	
Chlamydophrys stercorea -----	1	170		1	161	
Endamoeba coli -----	32	139		32	130	
Endamoeba dysenteriae -----	25	146		23	139	
Endamoeba nana -----	9	162		9	153	
Coccidium -----	6	165		2	160	
Blastocystis hominis -----	15	156		11	151	
Phycomycete spore -----	1	170		1	161	

During the past month two cases of human intestinal Coccidiosis have been detected in the course of routine examinations in this laboratory. One of these was in the case of a native of Tahiti who had been in Berkeley for less than one year. In the other case the infected patient had not been in foreign countries and was a resident of Berkeley, California.

Sixteen of the twenty-three persons reported as infected with Endamoeba dysenteriae were Orientals.

*"The first duty of a statesman is
the care of the public health."
—Disraeli.*



WILFRED H. KELLOGG, M.D., Acting Director
Bureau of Social Hygiene.

The Bureau of Social Hygiene co-operated with Mr. Ralph G. Cole, Boys' Secretary of the Y. M. C. A., in the formation of a campaign among high school boys, and five "keeping fit" series of slides were placed in Mr. Cole's hands. He divided the state into 27 districts with a supervisor for each, who was carefully informed about the program. Letters of explanation and pamphlets were sent to 150 high school principals informing them of the purpose of the campaign and explaining to them the material available. There were 49 immediate requests obtained, and it was found necessary to make careful schedules for the few exhibits to be used. The result of this work has been very gratifying. The boys of eighty high schools have seen the slides and placards, making a total of 9240 boys and young men who have been reached. Each one of these boys received the pamphlet entitled "Keeping fit." This material was obtained from the United States Public Health Service. The attitude of some of the principals may be understood by the following quotations from their letters:

"Splendid set. Can not send us too much of such valuable information."

"I have a boy in this high school who saw the slides this morning and heard the remarks. I would not take \$1000 for the good he has received."

"I have felt the need of such an exhibit for some time and was glad to show it to the boys before the school closed this year."

"A similar exhibit was shown in this school a year ago, but the appreciation of the boys in seeing it again was very noticeable, making me feel that it might be worth while to show this or similar exhibit every two or three years."

A coach and commandant of a large southern California high school stated that he believed this method was far more effective than a lecture and that he hoped the same set or another supplement would be shown early in the fall to all of the schools in his city.

The clinics are continuing their work, as usual, and this month there will be established, under the City Home League, a clinic in the Loring Building at Riverside. It will include a department for children, another for tuberculosis, as well as a clinic for venereal disease. The latter will be in charge of Dr. Thomas Card, a graduate of Stanford Medical College, until recently connected with the venereal clinic at Stanford. There will be a full time social service worker at the clinic, as well as three nurses in the general dispensary.

Dr. Etta C. Jeancon's report to Dr. L. M. Powers, Health Commissioner of Los Angeles, contains much interesting information. Following are excerpts from Dr. Jeancon's report:

"There were 345 new cases received, of which 81 had gonorrhœa, 102 syphilis, 36 had both syphilis and gonorrhœa, and 119 were negative for both. Of the 81 cases of gonorrhœa, 51 have been discharged as probably cured. One hundred eleven cases failed to return; some were turned over to other physicians for treatment, and some were lost sight of completely. A great many of the latter are old syphilitics who imagine they are well because they have no active manifestations."

"Our clinic has made great strides in the past year; our monthly reports show a steady increase, both in the number of new patients and the nightly attendance, with an additional impetus after the arrival of our social service worker. Our average nightly attendance for the last four months has been about 50, and we have had as many as 77. The social service worker has also been a great aid in bringing in delinquent patients."

"We have had 14 children under fifteen with gonorrhœa, and 9 under fifteen with lues, all but two of the latter being hereditary. There is a plan (still under advisement) for establishing a children's clinic for venereal disease. This would undoubtedly be an improvement over our present arrangement, both for the children who could be treated in the daytime and as a saving of time for the clinicians at night, as it is necessary to clear the treatment room of grown patients before the children are admitted."

"The statistics for the work at the city jail have been given with the report for Los Feliz Hospital. In addition, it has been interesting to note the number of women who have been arrested repeatedly during the year. Of these repeaters, 34 have been sent to the Los Feliz Hospital a second time, 2 have been sent the third time and 1 the fourth time. Sixteen who were sent to the hospital on * * * positive Wassermann had positive Wassermann on subsequent rearrest, 13 who were sent to the hospital on * * * positive Wassermann had negative Wassermann on subsequent rearrest. Twenty-three who had been sent to the hospital previously were not found infected for either disease at time of second arrest."

"Out of a total of 502 examined at the city jail during the year, 172 were negative for both; a proportion of 34 per cent, as against 12 per cent for last year. This interesting decrease in the number of infections may be due to more diligent prophylaxis or to their seeking and keeping up their treatments, either of which reasons is probably the result of the vigorous publicity campaign against venereal disease."

The distribution of arsenobenzol is given below in detail. The Bureau is now distributing 0.9 and 0.6 gms. ampoules neo-arsphenamine, as well as 0.6 and 0.4 gms. ampoules of arsenobenzol.

Arsenobenzol Distributed During the Month of September, 1919.

San Francisco Health Department.....	350
University of California Hospital, San Francisco.....	133
Stanford University Hospital, San Francisco.....	113
Los Angeles Health Department.....	100
Los Angeles County Hospital.....	100
Good Cheer Club Clinic, San Jose.....	97
Fresno County Hospital.....	72
Boyle Avenue Dispensary, Los Angeles.....	60
San Bernardino County Clinic.....	50
Kern County Hospital.....	50
San Francisco Hospital.....	50
Santa Clara County Hospital.....	36
Fresno City Clinic.....	30
Santa Barbara Cottage Hospital.....	12
Sacramento Board of Health.....	20
Orange County Hospital.....	12
Pasadena Dispensary.....	12
San Francisco Polyclinic.....	10
Riverside County Hospital.....	6
Oakland College of Medicine and Surgery Clinic.....	6
Berkeley Dispensary.....	3
	<hr/>
	1,322

Treatment reports received:

285 patients received one dose	285
136 patients received two doses	272
81 patients received three doses	243
44 patients received four doses	176
18 patients received five doses	90
5 patients received six doses	30
5 patients received seven doses	35
3 patients received eight doses	24

577	1,155
Ampoules wasted	10

1,165

Other occupations	236
Laborers	114
Housewives	114
Prostitutes	36
No occupations	50
Students	27

577

Males	314
Females	263

577

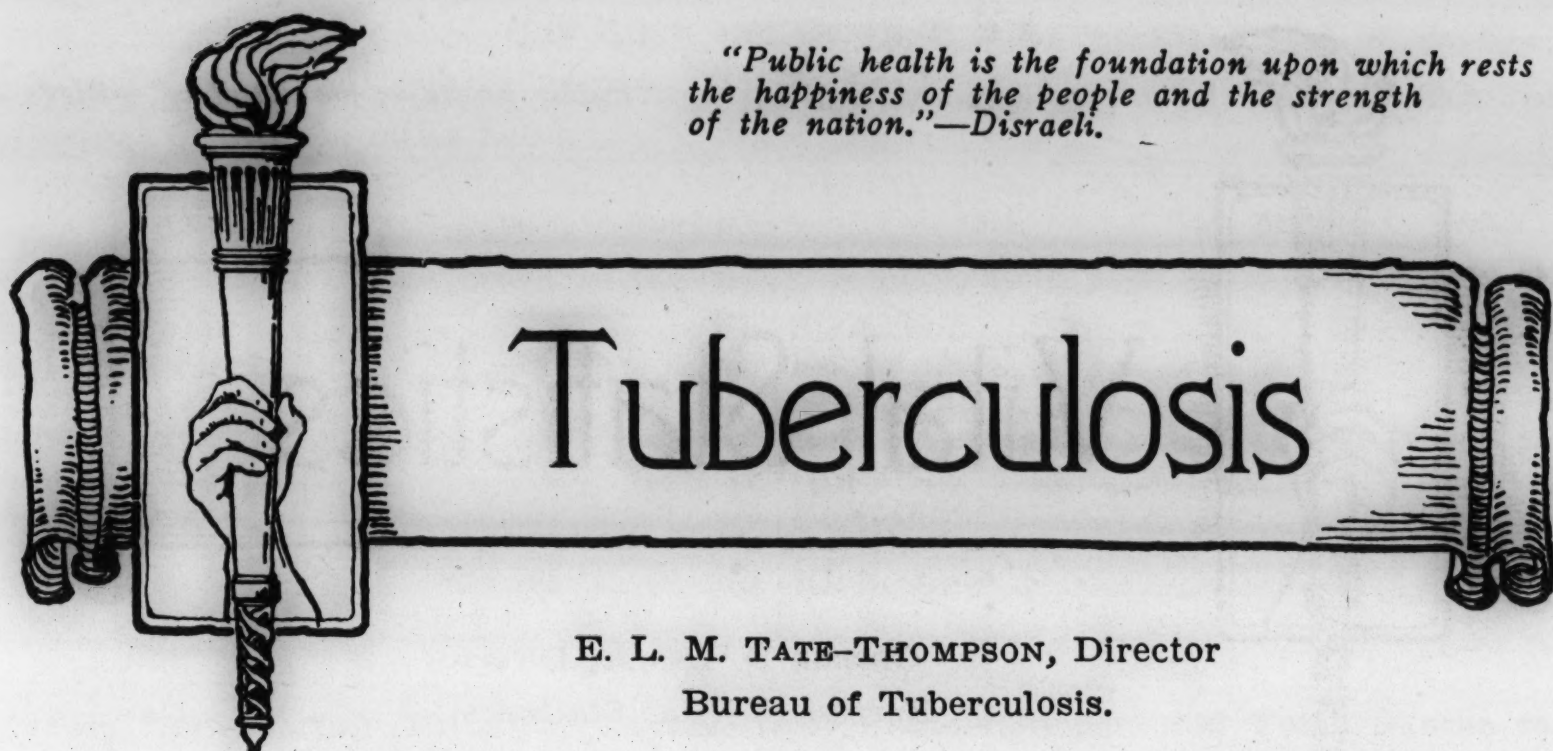
Patients Treated.

San Francisco Health Department Clinic	80
Los Angeles Municipal Clinic	64
Los Angeles County Hospital	60
Stanford University Clinic, San Francisco	47
San Francisco Hospital	35
Boyle Avenue Dispensary, Los Angeles	34
University of California Hospital, San Francisco	28
Los Angeles Juvenile Hall	26
Good Cheer Club Clinic, San Jose	24
Los Feliz Hospital, Los Angeles	22
Selwyn Emmett Graves Dispensary, Los Angeles	18
Santa Clara County Hospital	16
San Diego County Venereal Disease Clinic	18
Stockton City Clinic	16
Fresno County Hospital	13
Kern County Hospital	12
Pasadena Dispensary	10
Fresno City Clinic	8
Mission Valley Hospital, San Diego	8
Sacramento County Hospital	7
Sacramento Hall of Justice	6
Oakland College of Medicine and Surgery	6
San Francisco Relief Home	5
San Francisco Polyclinic	4
Santa Barbara Cottage Hospital	3
Tulare County Hospital	2
Berkeley Dispensary	2
Riverside County Hospital	2
Orange County Hospital	1

577

Total number of ampoules distributed	14,284
Total number of treatment cards received	13,109
Total number of treatment cards distributed and not returned	1,175
	14,284

"Public health is the foundation upon which rests the happiness of the people and the strength of the nation."—Disraeli.



E. L. M. TATE-THOMPSON, Director
Bureau of Tuberculosis.

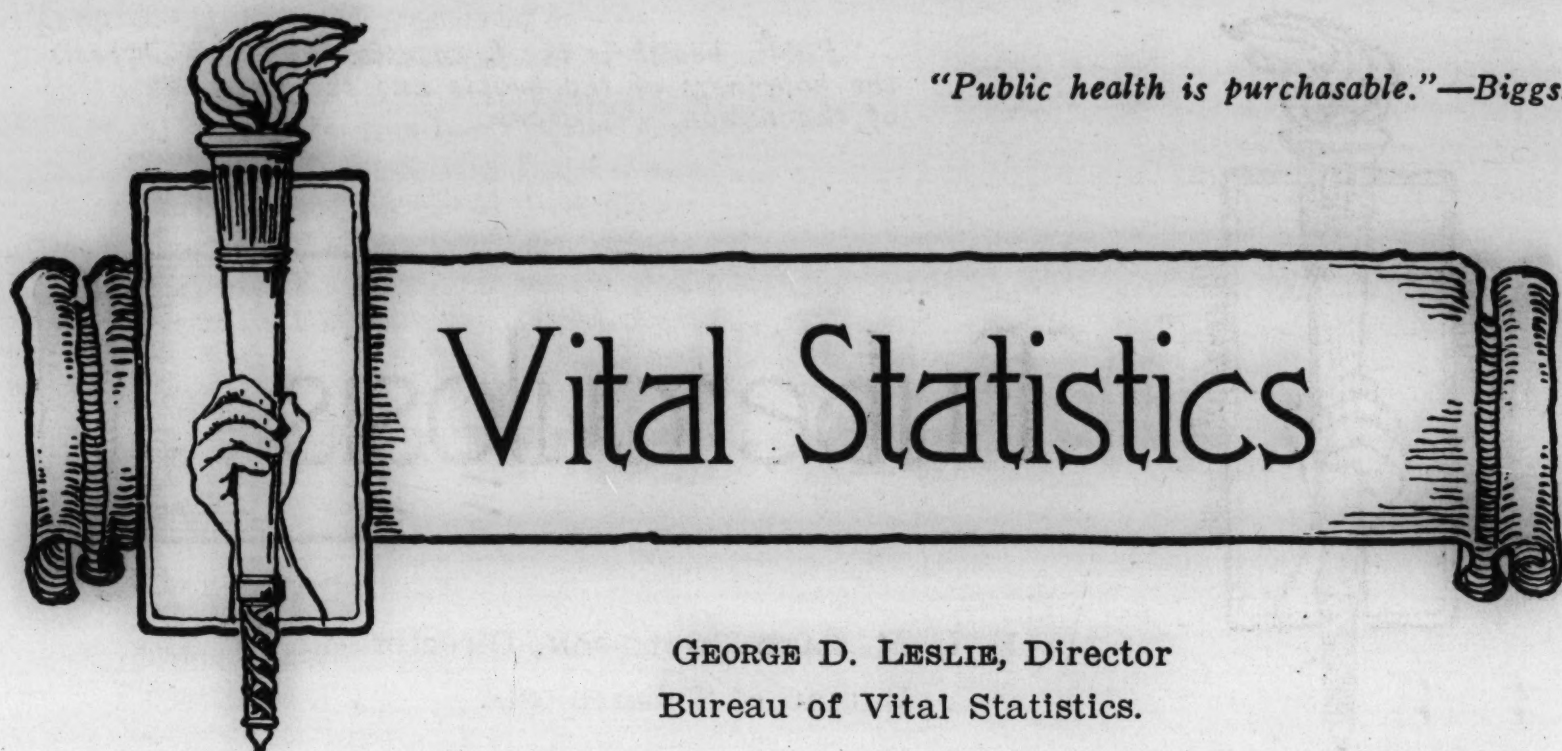
The International Red Cross tuberculosis program tallies so closely with the program for California that it is worth noting. Already our dispensary service in California has increased in the last five years something over 200 per cent. We have already provision for the inspection of school children, and if the state reaches its quota in the coming seal sale, malnutrition clinics for all children who are below weight will be established and careful note made of any child whose weight continues to be below normal. We already have hospital treatment on an advanced scale now for nearly all classes of cases. The County Nurse program is going along as rapidly as we can find public health nurses to take the responsibility of the work in the counties. We have some open air schools and after the first of the year shall have more. Occupational therapy has already been started in the hospitals, with a view to determining by the next legislature how much is to be gained for the patient, with the idea of establishing a convalescent colony.

At present it is almost impossible to keep step with the various tuberculosis activities throughout the state. The supervisors are already, on their own initiative, establishing recreation buildings in the new sanatoria—additional buildings are going up, and there seems to be a general feeling on the part of the people who previously refused to admit they had tuberculosis to take advantage of the care and treatment offered them. Certainly no hospitals in California, regardless of their charges are giving as good food as most of the subsidized hospitals are giving patients.

Meetings have been held at San Jose the past month and a visit made to Madera-Merced-Stanislaus counties beautiful place on the edge of the Yosemite. Building is going on rapidly there and they expect by early winter to occupy the sanatorium.

At the meeting held at the sanatorium in September, the supervisors decided to begin to develop the ranch at once, so that the institution will be practically self-supporting.

Meetings have been held with various tuberculosis committees during the month, but a large share of the month has been spent working on the Southwestern Conference program, since the director was secretary. A report of this conference will be made in the next issue of the Bulletin.



"Public health is purchasable."—Biggs.

Birth, Death and Marriage Totals, with Annual Rate per 1000 Population, for Current Month and Year to Date, for California: August.

Month or period	Total		Annual rate per 1,000 population, 1919
	1919	1918	
August—			
Births	4,296	4,864	16.1
Deaths	3,012	3,166	11.3
Marriages	3,447	3,169	12.8
January to August—			
Births	35,247	36,743	18.8
Deaths	32,307	28,525	17.3
Marriages	23,954	22,181	12.8

County Marriage Totals.

The counties showing the highest marriage totals for the month were as follows:

Los Angeles	842	San Bernardino	85
San Francisco	637	San Joaquin	82
Alameda	291	Marin	66
San Diego	149	Riverside	66
Sacramento	146	Santa Barbara	48
Orange	133	Tulare	47
Santa Clara	131	Kern	44
Fresno	100		

County Birth and Death Totals.

Exclusive of stillbirths in both cases, the birth and death totals for the month were as follows for the leading counties, arranged in decreasing order of birth registration:

County	Births	Deaths	County	Births	Deaths
Los Angeles	1,073	776	San Bernardino	104	63
San Francisco	626	495	Tulare	91	40
Alameda	492	259	Orange	79	54
Fresno	257	131	Kern	68	33
San Diego	135	136	Stanislaus	68	33
Sacramento	130	89	Contra Costa	63	19
Santa Clara	127	110	San Mateo	40	33
San Joaquin	117	80	Monterey	32	26

City Birth and Death Totals.

Birth and death totals, exclusive of stillbirths, are presented similarly for the principal California cities below :

City	Births	Deaths	City	Births	Deaths
Los Angeles -----	711	485	Stockton -----	59	54
San Francisco -----	626	495	San Jose -----	45	36
Oakland -----	338	157	Pasadena -----	45	40
San Diego -----	103	106	San Bernardino -----	42	28
Sacramento -----	100	78	Alameda -----	40	19
Berkeley -----	81	25	Bakersfield -----	30	15
Fresno -----	79	44	Santa Ana -----	26	12
Long Beach -----	61	51	Richmond -----	17	3

Deaths from Certain Principal Causes, with Proportion per 1000 Total Deaths for Current Month, for California: August.

Cause of death	Deaths, August	Proportion per 1,000, August
All causes -----	3,012	1,000.0
Typhoid fever -----	17	7.0
Malarial fever -----	4	1.3
Smallpox -----		0.0
Measles -----		0.0
Scarlet fever -----	1	.3
Whooping cough -----	7	2.3
Diphtheria and croup -----	14	4.6
Influenza -----	14	4.6
Other epidemic diseases -----	12	4.0
Tuberculosis of lungs -----	322	106.9
Tuberculosis of other organs -----	56	18.6
Syphilis and gonorrhea -----	18	6.0
Cancer -----	300	99.6
Other general diseases -----	103	34.2
Meningitis -----	12	4.0
Other diseases of nervous system -----	289	95.9
Diseases of circulatory system -----	553	183.6
Pneumonia and broncho-pneumonia -----	130	43.7
Other diseases of respiratory system -----	45	14.9
Diarrhea and enteritis, under 2 years -----	80	26.6
Diarrhea and enteritis, 2 years and over -----	39	12.9
Other diseases of digestive system -----	187	62.1
Bright's disease and nephritis -----	182	60.4
Childbirth -----	31	10.3
Diseases of early infancy -----	156	51.8
Suicide -----	55	18.3
Other violence -----	243	80.7
All other causes -----	138	45.8

The deaths from typhoid fever, diphtheria and whooping cough, together with cases reported, by counties, were as follows :

Typhoid	Deaths	Cases	Diphtheria	Deaths	Cases	Whooping cough	Deaths	Cases
Alameda -----	2	4	Alameda -----	1	16	Alameda -----	1	3
El Dorado -----	1	1	Fresno -----	2	4	Los Angeles -----	1	29
Fresno -----	4	3	Los Angeles -----	4	55	Orange -----	2	3
Los Angeles -----	4	27	Monterey -----	1	7	San Francisco -----	2	17
Riverside -----	1	5	Sacramento -----	1	2	Santa Barbara -----	1	10
San Diego -----	3	2	San Francisco -----	1	33			
San Francisco -----	1	8	San Joaquin -----	1	5			
San Luis Obispo -----	1		Solano -----	1				
Totals -----	17	50	Totals -----	12	122	Totals -----	7	62

Deaths by Sex, Race and Nativity, for August.

	Total	Male					Female				
		Total male	Born in California	Born in other United States	Foreign-born	Unknown	Total female	Born in California	Born in other United States	Foreign-born	Unknown
White	2,817	1,593	414	635	490	54	1,224	336	541	334	13
Black	45	27	5	21		1	18	4	13		1
Indian	13	10	7			3	3	2	1		
Chinese	58	52	4	1	47		6		1	5	
Japanese	74	47	13		34		27	18		9	
Korean	2	2	2								
Unknown	3	3			1	2					
Totals	3,012	1,734	445	657	572	60	1,278	360	556	348	14

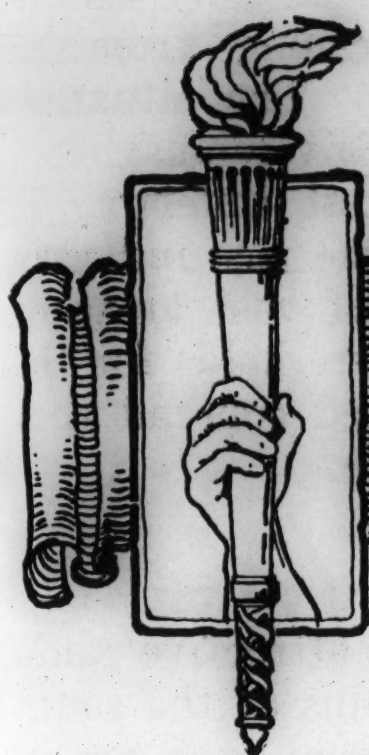
Infant Mortality.

	Male	Female	Total
Less than 10 days	72	46	118
10 days to 1 month	26	13	39
Over 1 month	16	8	24
Over 2 months	9	8	17
Over 3 months	10	8	18
Over 4 months	7	4	11
Over 5 months	7	3	10
Over 6 months	10	3	13
Over 7 months	2	5	7
Over 8 months	5	7	12
Over 9 months	3	4	7
Over 10 months	1	4	5
Over 11 months	2	2	4
Totals	170	115	285



One of the wards in the new Santa Barbara County model tuberculosis sanatorium.

"Health is the essential factor in productiveness, prosperity, and happiness, and hence in the advancement of civilization."—Sir Frederick Treves.



Sanitary Engineering

C. G. GILLESPIE, C.E., Director
Bureau of Sanitary Engineering.

A noteworthy piece of work on the disinfection of bathing suits, prompted by recent swimming pool regulations of the Board, has just been concluded by the Bureau engineers. The study and findings will shortly be issued in bulletin form for special distribution amongst swimming pool operators in California. Among other things, a novel and satisfactory technique for field sampling purposes was devised and reliable methods of suit and towel handling developed. So far as known, this is the first time a study of this problem has been undertaken.

★ ★ ★

The city of Stockton recently completed a new Reinsch-Wurl screen for the partial clarification of the sewage from the north part of the city, prior to disposal into the San Joaquin River. Several tests on the plant were run by the Bureau during the month, the effectiveness of the screen determined and considerable light thrown on sewage disinfection. The sewage here contains considerable wastes and its chlorine consuming power ranges between wide limits, which, however, may be fairly well gauged by the flow of sewage at the time. This observation made it possible to prescribe a sliding dose of chlorine as the flow varied. The tests also indicated that the relatively crude effluent of the Reinsch-Wurl screen required only slightly more chlorine for disinfection than the same sewage settled. The difference was so slight as to be not controlling in the selection of screening versus tankage treatment under the conditions prevailing at this plant.

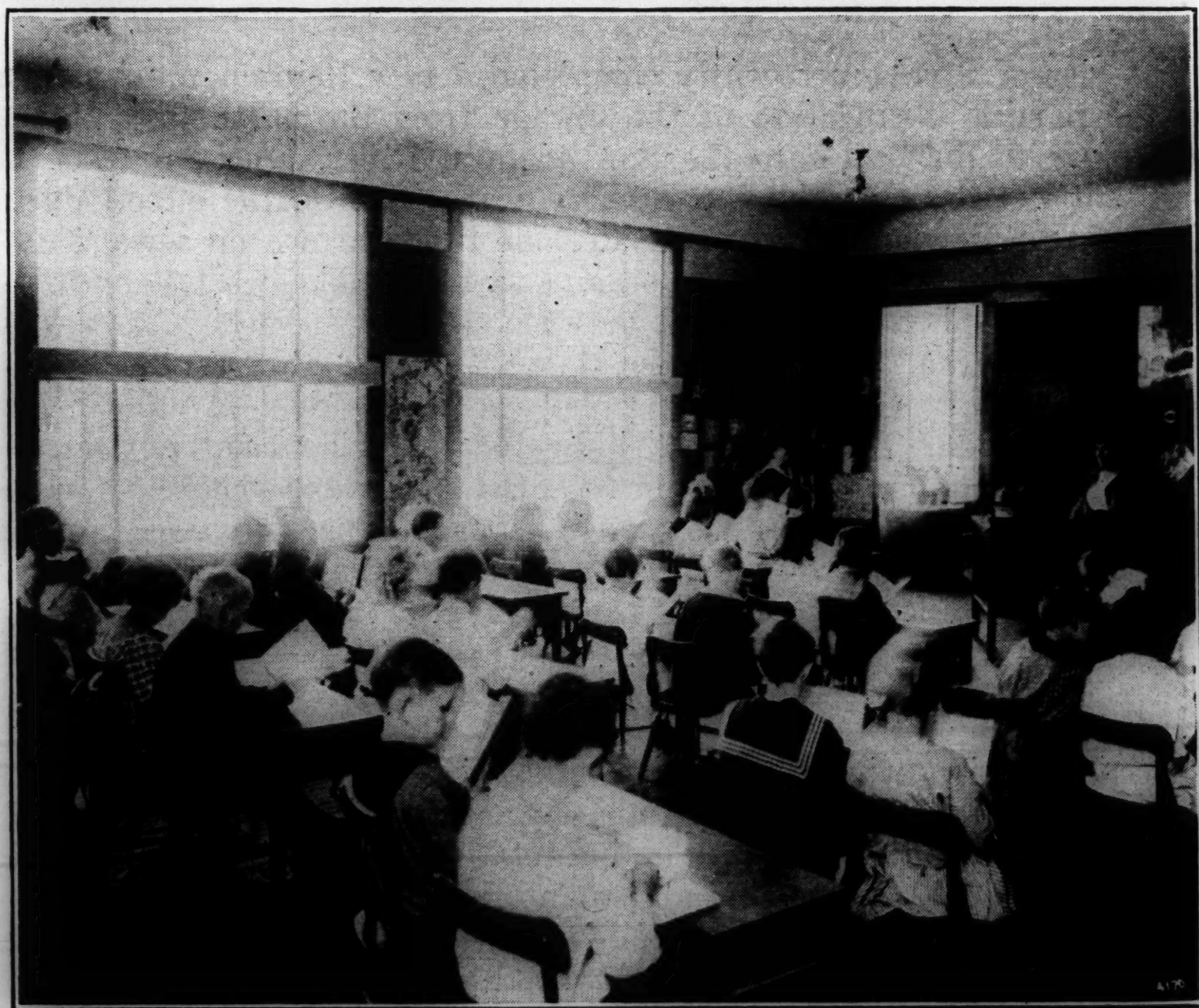
★ ★ ★

In co-operation with the State Engineering Department, work has continued on the design of up-to-date sewage treatment works at several of the state institutions. Construction has started on the plant for the Veterans' Home at Yountville and plans are almost completed for the work at the Sonoma State Home, Eldridge. Both plants will be of the Imhoff-Sprinkling Filter type and are expected to do away with a long-suffered nuisance.

Preliminary work has been done by the Bureau on a study of the deterioration of the Sacramento River due to return drainage from the rice fields and progressive diversion for irrigation. The situation threatens to be most acute as prospects of further diversions loom. This remarkable transformation in California's greatest waterway is to be explained by the lightning-like development of the rice industry and the throwing open to irrigation and settlement of vast areas of reclaimed land along the lower reaches. What the future holds for the Sacramento River is uncertain. Many closely informed contend that its drying up during the irrigation season is inevitable.

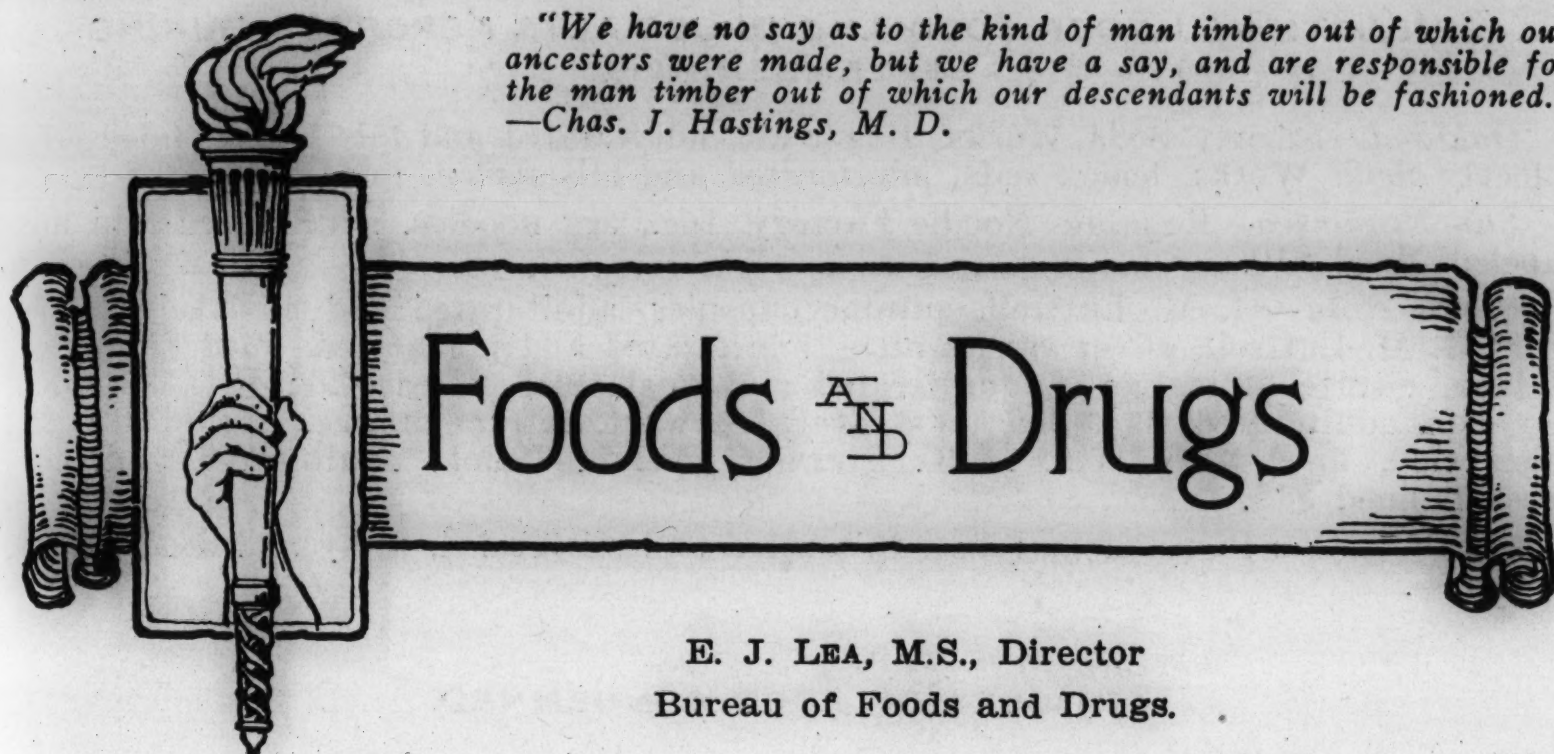
★ ★ ★

The grand work of the Forest Service in establishing attractive camp sites and camp spots in the Sierras and in the mountains of the south was surveyed, and elaborate plans for greater efforts next year are in preparation. It is hoped that wide-awake chambers of commerce and town boards of trustees can be interested in this form of self-advertisement by financing attractive camp sites throughout the mountains, to bear their name. Some few communities already are doing this and obtain thereby the best of advertising and good will. The Forest Service, pretty much unaided in the past, has fitted up rustic conveniences and fire places, picnic tables, good water supply, garbage dumps and toilet arrangements along most of the important Sierra roads, but the number is still inadequate and at the height of the season there is much congestion.



Fresh air and sunshine are necessary in every schoolroom. The children in this San Francisco school room are well provided with these requisites.

"We have no say as to the kind of man timber out of which our ancestors were made, but we have a say, and are responsible for the man timber out of which our descendants will be fashioned."
—Chas. J. Hastings, M. D.



E. J. LEA, M.S., Director
Bureau of Foods and Drugs.

A total of 170 samples were received at the laboratory during the month. Of these 58 official samples collected by the inspectors consisted of beverages, butter, candy, cheese, chocolate, condiments, eggs and egg substitute, extract of vanilla, canned fish, canned fruit, ice cream, jelly, meat, milk, nutmeats, paste, oil, syrups, tomato paste, vinegar, and mineral water. The drugs consisted of camphorated oil and *especifico de Dios*.

Fifty-four unofficial samples were collected, consisting of beer, butter, chocolate, condiments, feed, fruit, noodles, nutmeats, vegetables, tomato paste, pulp and puree.

Fifty-eight samples from state institutions consisted of baking powder, butter, coffee, coffee substitute, condiments, cream, cream of tartar substitute, flour, molasses, olive oil, shortening, sugar, syrup, tea and vinegar.

CASES REFERRED TO DISTRICT ATTORNEYS.

The following cases were referred to the district attorneys at the September meeting of the State Board of Health:

Alameda—A. S. Bufton, apple cider (two counts).

Eureka—City Meat Market, chopped meat.

Fortuna—Fortuna Merchandising Co., pure cider vinegar.

Los Angeles—Aycock Medical Co., "Woman Again," "New Life," "Man Again"; Pablo Baca, chocolate; Mills Eczema Remedy Co., Mills Eczema Remedy; Augustin Moreno and Brothers, chocolate; Y. Y. Perez, chocolate; Joseph San Roman, chocolate.

Merced—Cash Meat Market, chopped meat; Tuolumne Restaurant, chopped meat.

Modesto—Central Drug Store, camphorated oil and citrate magnesia; Diamond Market, sausages; Golden West Meat Market, chopped meat.

Oakland—D. N. Kessel, eggs; Mutual Creamery Company, ice cream.

Porterville—City Cash Market, chopped meat; Pioneer Market, chopped meat.

Sacramento—Fred Kolliker, camphorated oil.

San Francisco—Childs Dairy Lunch Company, maple syrup; Davis Brothers, Parisian hair tonic; Wm. Degener, tomato puree; Foster's Pharmacy, solution citrate magnesia; E. Pickering, canned peaches (two counts); Jas. Phillips, milk; P. Varella, maple syrup.

Santa Barbara—Central Market, chopped meat; Junior Cash Market, chopped meat.

Santa Rosa—Belden & Upp, bay rum.

Turlock—Sweet & Boies, camphorated oil.

**CONVICTIONS UNDER FOOD AND DRUGS ACTS REPORTED DURING
SEPTEMBER, 1919.**

Oakland—Liberty Soda Works, ginger ale, adulterated and mislabeled, fined \$10; Liberty Soda Works, lemon soda, adulterated and mislabeled, fined \$10.

San Francisco—Republic Noodle Factory, Inc., egg noodles, adulterated and mislabeled, fined \$10.

Santa Rosa—G. M. Luttrell, quinine capsules, adulterated and mislabeled, fined \$10; G. M. Luttrell, sweet spirits nitre, adulterated and mislabeled, fined \$5; B. C. Belden, citrate of magnesia, adulterated and mislabeled, fined \$25; B. C. Belden, bay rum, adulterated, fined \$15; Wm. McK. Stewart, extract orange, adulterated and mislabeled, fined \$15; Wm. McK. Stewart, extract lemon, adulterated and mislabeled, fined \$15.

Suisun—Wm. Pierce, tomatoes, adulterated and mislabeled, filthy and decomposed, fined \$50.

ARTICLES OF FOOD CONDEMNED.

Fruitvale—494 boxes tomatoes, mouldy, wormy, fermented.

Los Angeles—6550 pounds chili peppers; 6952 cans of Hook's tomato puree, adulterated.

Manteca—3 pounds mouldy liver; 18 pounds chopped meat containing sulfur dioxide; 1 young calf unfit for human consumption.

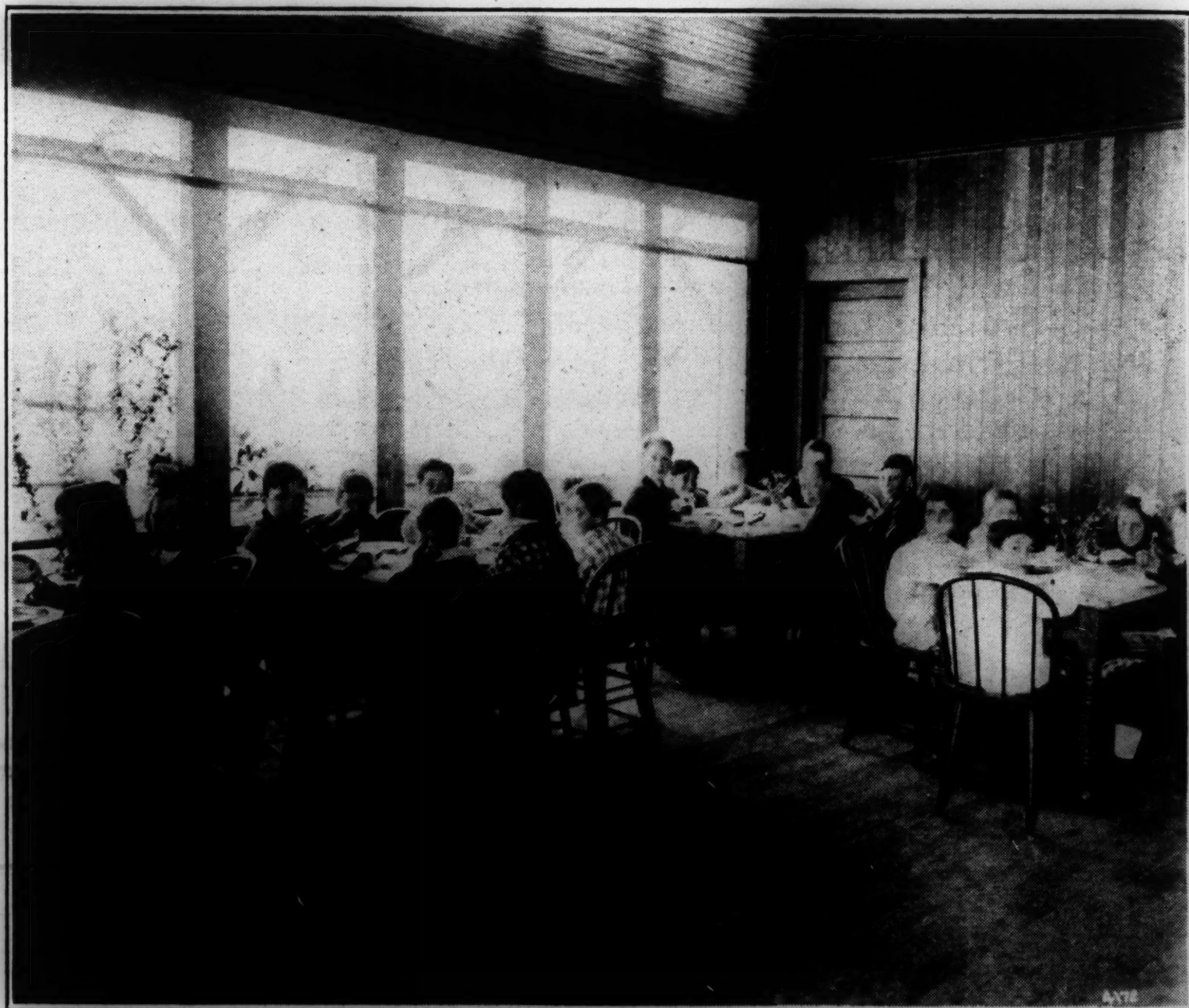
Oakland—30 pounds walnut meats, rancid and wormy.

Sacramento—5980 pounds mouldy, fermented tomatoes; 26,673 pounds mouldy, fermented tomatoes.

San Francisco—100 pounds mouldy walnut meats; 418½ cases Hook's tomato puree, adulterated; 490 sacks dried prunes, rain damaged and mouldy; 4467 pounds English walnuts in shell; rancid and oversulphured.

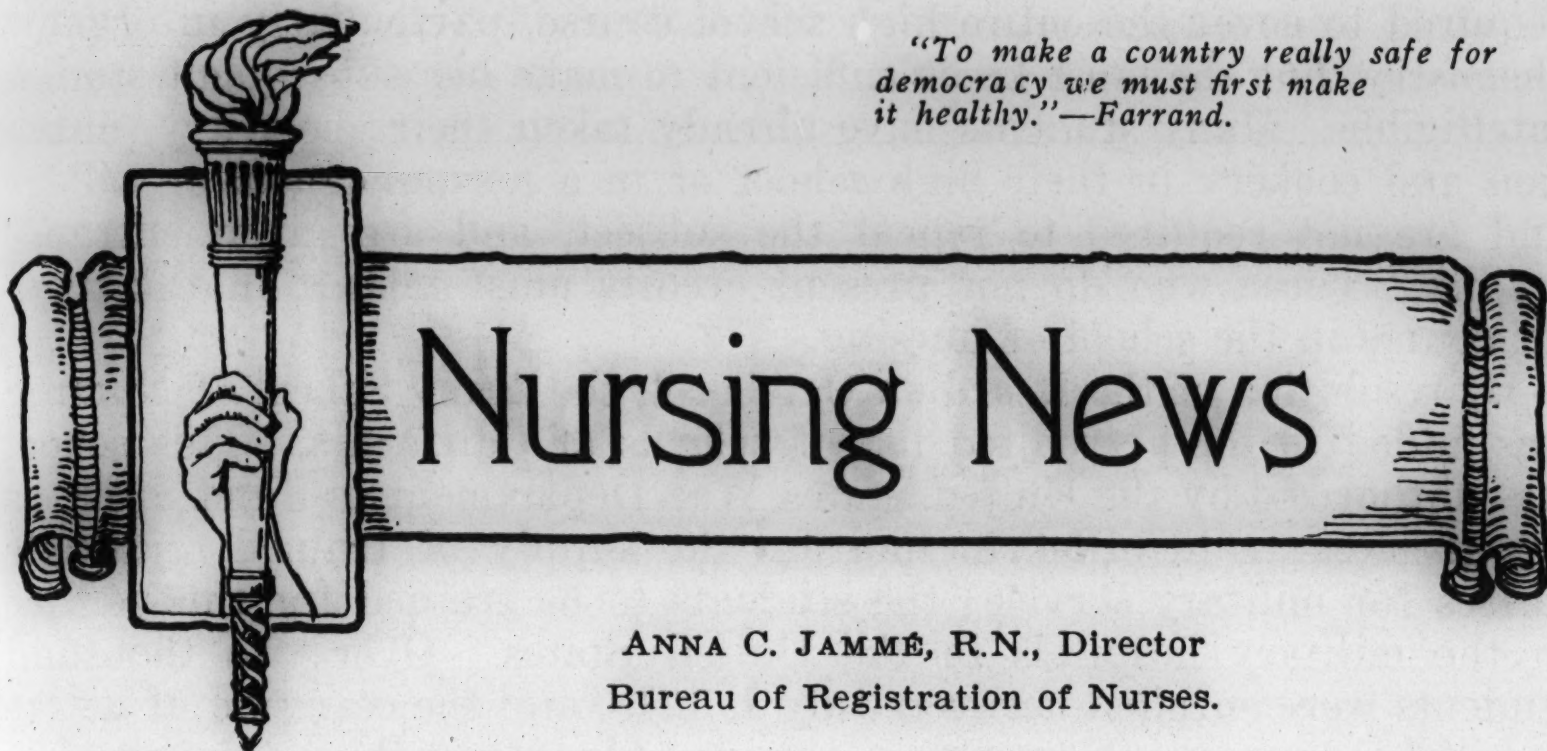
Santa Rosa—202 bottles Carlisle's bay laurel hair tonic, mislabeled.

Stockton—87 pounds mouldy liver.



The school lunch is a factor in the development of subnormal children and is of far greater importance than school books and blackboards.

*"To make a country really safe for
democracy we must first make
it healthy."—Farrand.*



ANNA C. JAMMÉ, R.N., Director
Bureau of Registration of Nurses.

Inspection of the following schools of nursing was made during the month of September:

St. Luke's, San Francisco.
Santa Clara County.
Columbia, San Jose.
O'Connor, San Jose.
Redlands Hospital.
St. Catherine's, Santa Monica.
San Bernardino County.
Riverside Hospital.
White Hospital, Sacramento.

The schools of nursing in connection with these hospitals have been accredited and are maintaining the requirements of the Board in the matter of instruction in theory and practice. In several instances recommendations have been made on certain points in the training in practical work. When the school is unable to comply in full with the requirements for service, an affiliation is arranged with another accredited school in order that the student may gain the necessary required experience in bedside nursing. Affiliation is arranged for the third year and, as a rule, is carried out with little difficulty.

In very nearly all accredited schools class work is started during September or early October, according to location, and continues uninterruptedly until May or June, when the students' vacations commence. By starting the class work at a definite period enables a better arrangement of schedules and continuity of work. The schools are making effort to have their students enter during the summer months and in January or February and forming the class groups immediately. This works out with far greater advantage to hospital and student. It is sincerely hoped that this school year will not suffer as the last, due to the unmerciful ravages of the influenza epidemic. Arrangement between the high schools and the schools for nurses for the purpose of instruction in the preliminary subjects is taking shape, and in many instances is well under way. The work in physiological chemistry, nutrition and cookery, is now given almost wholly in the high school and during the day. The chemistry teachers are beginning to see what is required for the student nurse and adjusting the course to her particular field where she will need to make the application. She is not

required to cover the entire high school course, particularly in organic chemistry, but she must know sufficient to make her subsequent studies intelligible. Many students have already taken their chemistry, nutrition and cookery in their high school or in a normal school or college and are not required to repeat the subject, and are given entrance credits. Those who do not present credits must take it in the regular course in the school of nursing.

By resolution of the Board on October 4, the Army School of Nursing was added to the accredited list of schools of California. This school was authorized by the United States War Department in June, 1918, as a war measure in order to increase the supply of trained, graduate nurses for military service; the students to be trained for this service in the military hospitals in the United States. Over two thousand students were enrolled between July 1, 1918, and the cessation of active hostilities in early November; considerably more than this number were prepared to enter had the need for their services continued. Units of students were sent to the military hospitals in the United States and were placed under competent instructors and received a rigorous course of instruction and training as well organized as in any high grade civilian school of nursing. The plan of instruction followed that of the National League of Nursing Education which is now in use in all schools of good standing. Affiliation with large civilian hospitals is arranged by the Surgeon General to provide experience in the bedside nursing of women and children, which experience is deficient in the military hospitals. A large number of students are still pursuing their studies and in time will graduate. By placing the school on the accredited list, recognition of the course of study is given by the state and the graduates will be eligible for examination and certification as registered nurses.

The following nurses have been granted the certificate as registered nurse under section eight of the law which provides that nurses registered in other states where the requirements of the law are equal to the requirements of the law of California may be registered in this state without further examination:

Callaghan, Evelyn M. (Minn.)	Mixon, Nell B. (Texas)
Christensen, Victoria B. (Utah)	Miller, Rachel M. (Ill.)
Juday, Louise Bernice (Ill.)	Norman, Lennie M. (La.)
Kyle, Florence Smithwick (Colo.)	Poe, Thomas J. (Miss) (Maryland)
Lindblad, Selma (Minn.)	Urban, Katie M. (Ill.)
Leibbrand, Martha (Minn.)	

The laws of the following states and foreign countries have requirements equal to the requirements of the law of California, namely, a three-year course of instruction:

Colorado	Nebraska
Idaho	North Carolina
Illinois	North Dakota
Indiana	Oregon
Iowa	Utah
Delaware	Rhode Island
Georgia	Tennessee
West Virginia	Texas
Louisiana	Wisconsin
Kentucky	New Zealand
Maryland	Queensland, Australia
Minnesota	Territory of Hawaii



How to Combat Mosquito.

California owes a large part of her envied reputation among the states to her agriculture and fruit growing industries, and there is possibly no greater source of loss to the farmer and fruit grower than that occasioned by the inroads of insidious malaria, carried and disseminated by the mosquito. It has been proved that this one feature is largely responsible in retarding the more rapid development of the southern states wherein, favored by soil and climate conditions, greater results should have accrued. The actual losses in money from lost time, liability and depleted energy, due to active and latent malaria, are almost beyond the powers of computation.

The approved line of attack to be employed in combatting the mosquito is that of oiling, draining, or filling in ponds and ditches in which the mosquito breeds. It is not intended to over-emphasize the

value of natural agencies such as bats, birds, toads and dragon flies, in mosquito repression, for there is no evidence at hand to prove that they materially lessen the number of mosquitoes or modify the degree of malaria in a given locality.

It should be remembered that the mosquito larva lives only in water, and that as small an amount as a teaspoonful in a broken crock or tin-can will furnish one domicile in a short time with enough mosquitoes to make the night hideous, as well as involving the danger of sharing your neighbor's malaria through infection. A little oil on the stagnant pond or in the rain barrel will work wonders for when the mosquito larvæ rise to breathe, the film of oil cuts off their air supply and they die. Figures showing losses due to the American nation through the inroads of malaria carried by the mosquito appear so extravagant as to be almost unbelievable.—*Visalia Times*.

Inspector Warns Fruit Stand Men.

Fruit and vegetable dealers who have been in the habit of exposing fruit and vegetables in such manner as not to protect them from dust and insects are warned by the county sanitary inspector to desist at once.

A crusade against the roadside markets has been begun by Jonathan Fitzpatrick, the inspector. In Los Angeles yesterday he asked for ten warrants against Japanese dealers who have been negligent.—*Pasadena Star-News*.

A RAT FOR EVERYBODY.

How do you like to give up one-half of one cent every day for the support and sustenance of a measly brown rat?

In substance this is exactly what you are doing, according to figures compiled by the United States Public Health Service, following a careful study in cities where the Service has made a survey.

There is one rat, at least, for every person in the United States. This estimate is considered conservative, but coincides with that for Great Britain and Ireland and also with authoritative figures for Denmark, France and Germany. The annual upkeep per rodent was computed by the same authorities as \$1.80 in Great Britain, \$1.20 in Denmark and \$1 in France. The depredations in this country will very probably exceed the estimate for Great Britain. One-half a cent a day is considered conservative, but even on this computation it costs the United States \$180,000,000 a year to support its rat population. This does not include mice.

It is because of this terrific economic loss and the additional fact that rats are a constant menace to the public health, that the Public Health Service has issued a warning to the country to take the necessary measures to destroy them. In a new bulletin, "The Rat," very convincing arguments are advanced as to why and how the rodent should be destroyed.

There are just three kinds of rats in this country included in the survey; the "Norway," or brown rat, the black rat and "Alexandrian" rat. The "Norway" rat, larger, more ferocious and antagonistic than the other two, has pretty generally killed them off, and today the black rat and "Alexandrian" rat are seldom found except in seaports.

Not so the brown, or "Norway" rat. Since he discovered America he has literally blazed a trail across the continent and taken possession of it as he went along. Today it is conservatively estimated there is at least one rat for every dweller in the cities and that on the farm there are at least three rats for every person in the State.

None of these rats is native to the United States. The black rat, which is now regarded as a visitor to our seaports, came to America long before the "Norway" rat, probably in the sixteenth century. He thrived until about the time of the American revolution, when the "Norway" rat was first observed. The latter's arrival was generally followed by the disappearance of the black rat, which is about the only good the "Norway" rat ever accomplished. The black rat generally is considered more dangerous to the public health, since it inhabits dwellings more often than its brown brother and comes in closer contact with man.

This does not mean, however, that the brown, or "Norway" rat is not dangerous. His destruction has been necessary before plague could be controlled in the few instances of its outbreak in America. Also, he is very probably responsible for the greatest amount of destruction.

By preference he is a burrower and usually lives in excavations, generally from one-half to a foot in depth. He is too cunning and resourceful to limit himself to this monotony of existence, however. He has been known to eat his way through a solid brick wall, a piece of slate, or lead pipe. With cunning found in very few animals, he adapts himself to almost any condition or situation in life. When

living in swampy regions he very quickly becomes semiaquatic and can swim long distances. He can climb ropes or trees.

The "Norway" rat will eat anything, while the black rat is more select and prefers grain, or clean food. Because the rat is nocturnal in its habits its depredations very frequently are not noticed.

There are some very well authenticated instances which give a good insight into the cost of their upkeep. In a ship reaching an American port from Brazil with 40,000 bags of coffee it was found that 30,000 bags had been so badly damaged as to require resacking. The cost of this in material and labor was \$2,000, exclusive of the loss of coffee and the damage adjustment with the shippers. The number of rats on this ship was ascertained to be about 200.

On a certain Iowa farm, rats in one winter destroyed 500 bushels of corn, or one-fourth of the farmer's entire crop. Another farmer lost an entire summer's hatching of chickens, and still another farmer in this section estimated his loss in grain and poultry due to rats as sufficient to pay his taxes for three years.

Many measures are suggested for destroying the rat, but the Public Health Service advocates one primarily as most effective. It is rat-proofing the buildings so that rats can not get in to get food, thereby starving them to death. Copies of the new government bulletin can be obtained by writing to the U. S. Public Health Service, Washington, D. C.



San Francisco has proved that an open-air school for children brings direct results in building strong bodies.

CANCER IS INCREASING.

Cancer, probably the most dreaded of all diseases, is on the increase in America and throughout the world, in spite of the fact that it is curable if treated early, says the United States Public Health Service. In its death toll in the United States cancer already ranks among tuberculosis, pneumonia, heart disease and diseases of the kidney, and it is much more feared than any of these. This is because of the ignorance of the public, the difficulty of detecting a cancer in its early stages, and the fact that when it has reached the recognizable stage it has gone beyond the curable stage.

The medical world today believes that work for the control of cancer should be largely similar to that so successfully carried on in tuberculosis; that is, it should consist mainly in widespread education of the general public to recognize cancer in its precancerous state, it should train the people at the first alarm to seek the advice of a competent physician, and it should keep the public freely advised of the latest scientific knowledge concerning cancer, its causes, prevention and cure.

The first and most important requirement in such a campaign of education is that the public change its viewpoint. The United States Census Bureau for 1917 gave a total of 61,452 deaths from cancer as compared with 112,821 from pneumonia, 110,285 from tuberculosis, 115,337 from heart disease and 80,912 from kidney diseases. So it will be readily seen that cancer already ranks among the leading causes of death in this country.

Cancer is apparently increasing. The recorded death rate shows about two and one-half per cent more cases every year. It has risen from 62.9 deaths per 100,000 of population in 1900 to 81.6 in 1917. Some of this increase is unquestionably due to an improvement in recording and gathering vital statistics and to better diagnosis, but it is generally believed that these factors do not alone account for the increase.

Cancer, if discovered early and treated immediately by a competent physician and surgeon, is now regarded as a curable disease. Unfortunately, the early discovery is difficult. Unlike almost any other disease its first attack is usually painless, and often, therefore, before the disease is discovered it has reached the stage where a major operation is necessary and the chances of cure have been greatly reduced, if not entirely lost. Another unfortunate circumstance is that in many cases when a person realizes he has cancer he fails to seek the best medical treatment. Advertising quacks and patent medicines, claiming phenomenal cures, loom up like a last ray of hope to the afflicted. As a matter of fact, their treatment invariably aggravates instead of helping, and when competent physicians are finally consulted the case is really beyond any hope of recovery or arrest.

The belief that cancer is contagious has caused untold suffering and occasionally cruel neglect of the unfortunate sufferers. So far as it has been possible for scientists to learn, there is no germ capable of causing cancer in human beings or animals. In communities where the cancer prevalence is higher than in others it has invariably been traced to the fact that most of the young people had left the community. Since cancer is a disease of middle age, the higher rate was to be expected. There is no case on record in which either an operating

surgeon, or nurse, has contracted cancer from coming into contact with it, even after years of work exclusively in this field.

Another popular myth that seems to be pretty well exploded is that cancer is hereditary. No argument could be more convincing than the way life insurance companies look at this aspect of the disease from a business point of view. In deciding whether a person is a "good risk" these companies disregard evidence that cancer occurred in one or both parents, or in other ancestors. Their carefully-kept statistics covering many years prove that the person to be insured will not necessarily contract the disease. Indeed, the insurance companies say there is no cause for apprehension even if both parents died of cancer. The most that could be fairly argued is that people whose families seem particularly susceptible to cancer should well inform themselves with regard to early symptoms and be on the alert for the first danger signal.

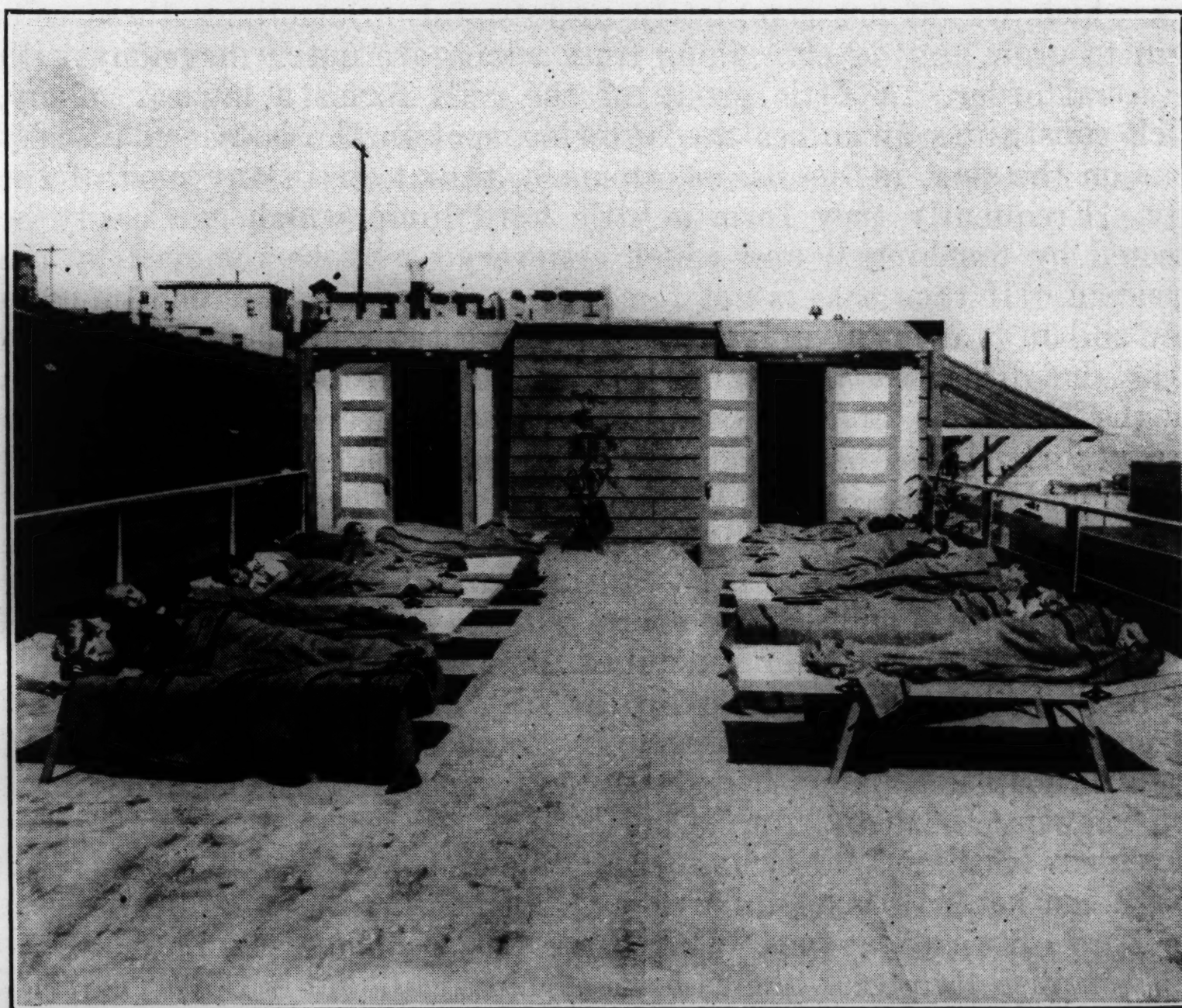
The tissues of the body, the muscles, the glands, the bones, are each composed of a very large number of very tiny cells, which may be compared to the bricks in a building, and they are held together by a material which may be compared to the mortar. However, the body cells are alive, constantly growing and dying off, according to certain laws which we do not completely understand. Sometimes these cells begin to grow and develop along lines which are not in harmony with the usual order. A little group of the cells forms a lawless colony, which constitutes an unhealthy, growing spot in the body. This may occur on the skin, in the breast, stomach, throat, or in any part of the body. Frequently they form a little hard lump which can easily be detected by touching it and which can very easily be removed by the physician. If this mass is not removed at once it usually continues to grow and to branch off into the surrounding tissues. This penetration marks the difference, the fatal line between the benign or harmless growths like warts, and malignant growths or cancers. Finally a large mass is formed and minute portions become detached and are carried to other parts of the body. When ordinary cells become detached and get out of place they usually die. Cancer cells, on the other hand, have such a power of survival they continue to grow wherever they are deposited and new cancers are the result.

Cancer often arises after continued, long irritation of various kinds and in and about benign growths, or ulcerations. Cancer of the lip and mouth has been known to come from burns, from pipe stems, from constant irritation from bad teeth and, among East Indian races, from chewing the betel nut. Cancer of the external abdomen in the natives of Kashmir, never observed among other races, arises from burns from kangri baskets of live coals which these mountaineers wear as a kind of warming pan. Cancer of the oesophagus is observed in the Chinamen, who eat their rice too hot, while it is absent in the women, who eat their rice cold at a "second table."

Women, unfortunately, are most susceptible to cancer. Between the ages of 35 and 43, three times as many women as men die of cancer, and between 45 and 50, twice as many die. They should, therefore, be especially educated to recognize the first signs of a benign growth and consult a physician at once. Persistent ulcerations, cracks and sores, warts, moles, or birthmarks which change in appearance, or grow larger, should be removed. All forms of chronic irritation should be prevented.

While no one in particular can be said to be susceptible to cancer, it can truthfully be said that so far as is known no one is immune to it, and statistics leave no room to doubt it is on the increase. The time has come when the general public should be educated as thoroughly as in the nation-wide campaign for the control of tuberculosis.

To aid in this work the United States Public Health Service has carefully prepared a neat, pocket-sized booklet, "Cancer, Facts Which Every Adult Should Know," written in lay terms. This book will be forwarded on application to the Public Health Service, Washington.



The rest hour in one of San Francisco's open-air schools for subnormal children.

LIST OF COUNTY AND CITY HEALTH OFFICERS.

Alameda County—

Dr. J. Hal Cope	Pleasanton
Alameda	Dr. A. Hieronymus
Albany	Dr. J. F. Diddle
Berkeley	Dr. Ernest H. Pape
Emeryville	Dr. A. T. Drennan
Hayward	Dr. F. W. Browning
Livermore	Dr. J. K. Warner
Oakland	Dr. Daniel Crosby
Piedmont	Dr. Benj. T. Mouser
Pleasanton	Dr. J. Hal Cope
San Leandro	Dr. Luther Michael

Alpine County—

Markleeville

Amador County—

Dr. G. L. Lynch	Amador City
Amador City	W. T. Connors
Jackson	H. E. Kay
Plymouth	W. J. Ninnis
Sutter Creek	T. W. Trudgen

Butte County—

Dr. L. L. Thompson	Gridley
Biggs	Sarah J. Hiett
Chico	W. H. Marshall
Gridley	Dr. L. Q. Thompson
Oroville	Dr. W. F. Gates

Calaveras County—

Dr. George F. Pache	Angels Camp
Angels Camp	Dr. E. W. Weirich

Colusa County—

Dr. G. W. Desrosier	Colusa
Colusa	Dr. G. W. Desrosier

Contra Costa County—

Dr. Chas. R. Blake	Richmond
Antioch	Dr. W. S. George
Concord	Dr. F. F. Neff
El Cerrito	Dr. J. T. Breneman
Hercules	Dr. C. T. Wetmore
Martinez	Dr. Edwin Merrithew
Pinole	Dr. M. L. Fernandez
Pittsburg	Dr. H. E. Peters
Richmond	Dr. Chas. R. Blake
Walnut Creek	Dr. C. R. Leech

Del Norte County—

Dr. E. M. Fine	Crescent City
Crescent City	Dr. E. M. Fine

El Dorado County—

Dr. S. H. Rantz	Placerville
Placerville	P. J. Hall

Fresno County—

Dr. G. L. Long	Fresno
Clovis	Dr. M. S. McMurtry
Coalinga	Dr. C. W. Hutchinson
Firebaugh	Thos. B. Gaines
Fowler	Chas. Chapman
Fresno	Dr. Geo. H. Bland
Kingsburg	Dr. T. D. Smith
Reedley	Dr. Chas. H. Traher
Sanger	E. G. Thompson
Selma	Dr. Fred H. Williams

Glenn County—

Dr. F. M. Lawson	Willows
Orland	Dr. S. Iglick
Willows	Dr. W. H. Walker

Humboldt County—

Dr. F. R. Horel	Arcata
Arcata	Dr. G. W. McKinnon
Blue Lake	Dr. Earl W. Hill
Eureka	Dr. John N. Chain
Ferndale	Dr. J. J. Myers
Fortuna	Dr. Orville Rockwell

Imperial County—

Dr. L. C. House	El Centro
Brawley	Dr. Eugene Le Baron
Calexico	Dr. M. L. Parcells
Calipatria	L. P. Phillips Jr.
El Centro	Dr. W. F. Peterson
Holtville	C. L. Gillett
Imperial	R. M. Thompson

Inyo County—

Dr. I. J. Wordin	Independence
Bishop	Dr. D. M. Nicoll

Kern County—

Dr. S. C. Long	Bakersfield
Bakersfield	Dr. P. J. Cuneo
Delano	Dr. J. R. Hicks
Maricopa	Dr. H. N. Taylor
McKittrick	Dr. Robert McLaughlin
Taft	Dr. M. W. Pascoe
Tehachapi	Dr. M. Kay

Kings County—

Dr. C. L. Scott	Hanford
Corcoran	Dr. L. O. Henrich
Hanford	Dr. A. S. Torrens
Lemoore	Dr. Blake Franklin

Lake County—

Dr. A. N. Craig	Kelseyville
Lakeport	P. H. Millberry

Lassen County—

Dr. F. D. Walsh	Susanville
Susanville	Mrs. Ralph Hart

Los Angeles County—

Dr. J. L. Pomeroy	Los Angeles
Alhambra	Dr. F. E. Corey
Arcadia	F. W. Treen
Avalon	Dr. J. J. Peckham
Azusa	Mrs. Nettie Dingman
Beverly Hills	Dr. J. R. Perry
Burbank	Dr. E. H. Thompson
Claremont	Dr. F. H. Geer
Compton	A. C. Cooney
Covina	Dr. J. A. Lepley
Culver City	Dr. W. F. Mortensen
Eagle Rock	Dr. C. H. Phinney
El Monte	Dr. B. B. Bolton
El Segundo	Dr. R. S. Anthony
Glendale	Dr. R. E. Chase
Glendora	Dr. J. L. Pomeroy
Hermosa Beach	B. F. Brown
Huntington Park	Dr. Thos. J. DeVaughn
Inglewood	Dr. C. M. Graham
La Verne	Dr. W. H. Eaton
Long Beach	Dr. R. L. Taylor
Los Angeles	Dr. L. M. Powers
Manhattan Beach	Llewellyn Price
Monrovia	Dr. Chas. D. Gaylord
Monterey Park	Dr. N. J. Brown
Pasadena	Dr. J. S. Hibben
Pomona	Dr. W. H. Eaton
Redondo Beach	Dr. A. C. Hendree
San Fernando	Dr. John M. Griffiths
San Gabriel	Dr. Wm. W. Worster
San Marino	Dr. W. LeMoyné Wills
Santa Monica	Dr. F. J. Wagner
Sierra Madre	Dr. R. H. Mackerras
South Pasadena	Dr. C. F. Metcalf
Venice	Dr. I. L. Magee
Vernon	Dr. L. J. Williams
Watts	Dr. J. L. Lamb
Whittier	J. C. Warner

Madera County—

Dr. C. A. Robinson	Madera
Madera	Dr. C. A. Robinson

Marin County—

Dr. J. H. Kuser	Novato
Belvedere	Dr. Florence Scott
Corte Madera	A. F. Roberts
Larkspur	Dr. L. Newman
Mill Valley	Theodore B. Thorndike
Ross	Dr. Thos. U. Smith
San Anselmo	Dr. O. W. Jones
San Rafael	Dr. W. F. Jones
Sausalito	Dr. Allan H. Vance

Mariposa County—

Dr. E. S. Scott	Mariposa
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Mendocino County—

Dr. S. L. Rea	Ukiah
Fort Bragg	Dr. Harper Peddicord
Point Arena	M. S. Scott
Potter Valley	W. T. Eddie
Ukiah	Dr. Lew K. Van Allen
Willits	Dr. Ernest C. Griner

Merced County—

Dr. J. L. Mudd	Merced
Gustine	Dr. C. E. Stagner
Los Banos	Dr. R. Jadarola
Merced	Dr. C. H. Castle

Modoc County—

Dr. W. E. Coppedge	Alturas
Alturas	Dr. John Stile

Mono County—

Bridgeport

Monterey County—

Dr. J. A. Beck	Salinas
Carmel-by-the-Sea	W. T. Kibler
King City	Mrs. R. H. Brunette
Monterey	Peter Sella
Pacific Grove	James P. Evans
Salinas	S. F. Butler

Napa County—

Dr. O. T. Schulze	Napa
Calistoga	Harry Von Arx
Napa	E. L. Geiger
St. Helena	Wynn M. Powers

Nevada County—

Dr. Carl P. Jones	Grass Valley
Grass Valley	Dr. Carl P. Jones
Nevada City	Geo. H. Calanan

LIST OF COUNTY AND CITY HEALTH OFFICERS—Continued.

Orange County—

Dr. Arthur H. Domann	Orange
Anaheim	Dr. J. W. Truxaw
Brea	Dr. O. S. Parrett
Fullerton	Dr. J. H. Lang
Huntington Beach	Dr. G. A. Shank
Newport Beach	J. A. Porter
Orange	Dr. J. C. Crawford
Santa Ana	Dr. J. I. Clark
Seal Beach	Miss Sadie Sweeney
Stanton	James F. Robinson

Placer County—

Dr. G. W. Davis	Lincoln
Auburn	Dr. Theodore Suypp
Colfax	Dr. Charles J. Durand
Lincoln	F. R. Elder
Rocklin	John H. Gregory
Roseville	G. W. Lohse

Plumas County—

Dr. J. R. Laswell	Quincy
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Riverside County—

Dr. James G. Baird	Riverside
Banning	Dr. Franklin P. Blake
Beaumont	Robert Adams
Blythe	Dr. W. H. Chapman
Corona	Dr. W. S. Davis
Elsinore	Dr. G. E. Shank
Hemet	Dr. J. A. Ramsay
Perris	Dr. J. N. Reese
Riverside	Dr. W. B. Wells
San Jacinto	Dr. H. O. Miller

Sacramento County—

Dr. J. A. Loughridge	Folsom
Sacramento	Dr. W. J. Hanua

San Benito County—

Dr. J. M. O'Donnell	Hollister
Hollister	Dr. J. M. O'Donnell
San Juan	W. S. Hayden

San Bernardino County—

Dr. L. M. Coy	San Bernardino
Chino	Dr. Elgar Reed
Colton	Dr. C. F. Whitmer
Needles	Dr. A. S. Boland
Ontario	Dr. Calvert L. Emmons
Redlands	Dr. Wm. A. Taltavall
Rialto	Dr. L. P. Barbour
San Bernardino	Dr. F. M. Gardner
Upland	E. R. Bowman

San Diego County—

Dr. G. B. Worthington	San Diego
Chula Vista	
Coronado	Dr. Raffael Lorini
East San Diego	Dr. C. R. Carpenter
El Cajon	
Escondido	Dr. B. L. Crise
La Mesa	Dr. A. D. Marks
National City	Dr. Theo. F. Johnson
Oceanside	Dr. R. S. Reid
San Diego	Dr. E. P. Chartres-Martin

San Francisco (city and county)—

Dr. W. C. Hassler	San Francisco
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San Joaquin County—

Dr. A. Cavagnaro	Stockton
Lodi	Dr. S. W. Hopkins
Manteca	F. M. Roundtree
Stockton	Dr. Linwood Dozier
Tracy	Dr. Allen R. Powers

San Luis Obispo County—

Dr. C. J. McGovern	San Luis Obispo
Arroyo Grande	Dr. H. S. Brown
Paso Robles	Wm. Ryan
San Luis Obispo	W. F. Cook

San Mateo County—

Dr. F. Holmes Smith	San Bruno
Burlingame	Lewis A. Cavaller
Daly City	Dr. A. H. Rankin
Hillsborough	C. M. Hirschey
Redwood City	Dr. J. E. Chapin
San Bruno	Dr. F. Holmes Smith
San Mateo	Dr. W. C. McLean
So. San Francisco	Dr. J. C. McGovern

Santa Barbara County—

Dr. G. S. Loveren	Santa Barbara
Lompoc	Dr. C. B. Constable
Santa Barbara	Arthur W. Sloan
Santa Maria	Dr. W. T. Lucas

Santa Cruz County—

Dr. Wm. H. Keck	Santa Cruz
Santa Cruz	Dr. A. N. Nittler
Watsonville	Dr. A. W. Birby

Santa Clara County—

Dr. Wm. Simpson	San Jose
Alviso	Alice Davee
Gilroy	Dr. J. W. Thayer
Los Gatos	Dr. M. S. Anderson
Mayfield	Joseph Ponce
Morgan Hill	Dr. W. D. Miner
Mountain View	Dr. A. H. MacFarlane
Palo Alto	Louis Olson
San Jose	Dr. W. C. Bailey
Santa Clara	Dr. G. W. Fowler
Sunnyvale	M. J. McGinnes

Shasta County—

Dr. S. T. White	Redding
Kennett	Dr. C. H. Haake
Redding	E. A. Rolison

Sierra County—

Dr. O. A. Eckhardt	Downsville
Loyalton	Dr. L. G. Ede

Siskiyou County—

Dr. H. S. Warren	Yreka
Dorris	Otha A. Wilkins
Dunsmuir	F. W. O'Donnell
Etna	Dr. W. H. Haines
Fort Jones	T. J. Wayne
Montague	Hugh W. French
Sisson	Dr. Paul Wright
Yreka	Dr. H. S. Warren

Solano County—

Dr. W. C. Jenney	Vacaville
Benicia	Dr. Abbie Blodgett
Dixon	H. G. Grove
Fairfield	F. L. Morrill
Rio Vista	Geo. Adcock
Suisun	Dr. A. G. Bailey
Vacaville	W. F. Hughes
Vallejo	Dr. A. J. Klotz

Sonoma County—

Dr. F. O. Pryor	Santa Rosa
Cloverdale	E. E. Gibbins
Healdsburg	Dr. J. W. Seawell
Petaluma	Dr. R. B. Duncan
Santa Rosa	Dr. Jackson Temple
Sebastopol	Dr. Lafayette Wilson
Sonoma	J. H. Albertson

Stanislaus County—

Dr. J. L. Hennemuth	Modesto
Ceres	T. F. Perrin
Modesto	Dr. J. W. Morgan
Newman	Dr. H. V. Armistead
Yuba City	Dr. J. H. Barr
Oakdale	Dr. E. R. Clarke
Turlock	Dr. C. E. Pearson

Sutter County—

Dr. W. L. Stephens	Meridian
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Tehama County—

Dr. E. E. Thompson	Red Bluff
Corning	Dr. Caroline Hewes
Red Bluff	Dr. F. J. Bailey
Tehama	Dr. J. H. Belyea

Trinity County—

Dr. David B. Fields	Weaverville
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Tulare County—

Dr. A. W. Preston	Visalia
Dinuba	Dr. C. A. Tillotson
Exeter	Dr. W. R. Tyler
Lindsay	Dr. C. W. Locke
Porterville	Dr. O. C. Higgins
Tulare	Dr. J. B. Rosson
Visalia	Dr. A. W. Preston

Tuolumne County—

Dr. Wm. L. Hood	Sonora
Sonora	Dr. Wm. L. Hood

Ventura County—

Dr. A. A. Maulhardt	Oxnard
Fillmore	Dr. Will R. Manning
Oxnard	Dr. G. A. Broughton
Santa Paula	Dr. Geo. Corey
Ventura	L. M. Wilson

Yolo County—

Dr. W. J. Blevins	Woodland
Davis	Dr. W. E. Bates
Winters	C. M. Norton
Woodland	Alice G. Thomas

Yuba County—

Dr. J. H. Barr	Marysville
Marysville	Dr. A. L. Miller
Wheatland	W. H. Niemeyer